Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							David Dunlap observatory				
							74" Logbook				
							Vol. 62				
							Plate Nos 50262 — 50540				
							May 1988 — April 1989				

5

Tues-Wed

Date MAY 24/25/1898 Observers N.S.-T.a

Emulsion Batches:

1.80, 0.25 II.60-e.217.-APR28

Dev in MY 06 Tn 247, 0.14 III a5-e5g.235.-MAR15

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comp Exp.
50262F	Focus test			20 00		0 0	+27 30	Fe Arc Clear	3700 3300
50262	HD 8890	01 22.6	+88 46	20 44	20 56	10 48 W	+89 10	"	1st only 3000
50263	"	"	"	20 58	21 08	11 00 W	"	"	1550 1600
50263T	Spot Calⁿ For 50262-63		50265-68, 71-73.			15 min @15V	D4 3900 D3 4300 D2 4810		
50264	HD 112028	12 48.3	+83 58	21 23	22 32	01 38 W	+83 22	Fe Arc Clear	1550 3000
50264T	Spot Calⁿ For 50264.					15 min @D4	17.5V 3900 15V 4300	15V 4810	

Spectr. Temp. 60°f ..... Dome Temp./Hum. 160°f H=55% Transparency Conditions . Fine, thc cloudy 6

Focus ..... 391 .....

Spectr. Temp. 52°f ..... Dome Temp./Hum. 150°f H=70% V gusty from NW

B Filter Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3700/3320				BC	1200/5008	BS	IIaO	1			contrasted
10,200	Poor	2	F	"	"	"	IIaO-e	1	Asyn Sp - Kit	Reversed	
10,573	Poor	"	"	"	"	"	"	1	"	"	
							"				W
9,300	Poor	5.28	B8	BC	1200/5048	BS	IIIa-d-eg	1	Shell-Bln	Reversal - Cloudy	
							IIIa-d-eg			Rainbow 0:30	W

7 Wed-Thurs

Emulsion Batches:
Ha O 2A7 APR 28
Dev MAY 26 Tn Mad-cfg 1A7 APR 25 252, 0, 12

Date MAY. 25-26. 1988 Observers NSF-Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50265	HD 8890	01 22.6	+88 46	20 19	20 24	10 21W	+89 02	Fe Arc Clear	1500 1500
50266	"	" 1988	" 1988	20 27	20 33	10 30 W	"	"	1584 1560
Fm 0000 49.TN	BS 4846	12 44.6	+45 30	20 50		0003W	+45 41	4 frames	X4 Int
50.TN	HD 103095	11 47.2	+38 26	21 00		01 06W	+37 59	"	"
50267	"	"	"	21 09	23 35	03 40W	"	Fe Arc Clear	1100 1200 1160
50268	HD 122742	13 58.6	+11 16	23 42	02 25	04 44W	+11 02	"	1150 1200 1160
50269	HD 159561	17 30.3	+12 38	02 32	02 39	01 02W		"	2000 2000
50269T	Spot Calib for	50269-50270.		15 min @	DA 17.5V 3900	15V 4300	15V 4810		
Fm 0000 51.TN	HD 175740	18 51.7	+41 28	02 54		0 0	+41 45		2000 2100
50270	HD 182640	19 20.5	+2 55	02 59	03 28	0005W		Fe Arc Clear	2000 2000
50271	HD 161096	17 38.5 1988.5	+4 37	03 33	03 44	0200W	+4 46	"	1500 2100
Fm 0000 52.TN	BS 7653	20 00.6	+27 43	03 55		0 0	+27 50	4 frames	Int X4

Spectr. Temp. ..53°f..... Dome Temp./Hum. 40°c / 60% H Transparency Conditions. Fine ... sl gusty 8

Focus ....3.91 - 3.93.....

Spectr. Temp. 47°f..... Dome Temp./Hum. 44°c / 80% Note I enter only the best of a few seeing + cst images. Blurred ones no wind for 2nd seeing test, grab drive error. Effects.

Exp. Mtr. Blue filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
10,200	so so	2	F	BC	1200/50-8	BS	IIaO-e	1	Asm Sp-kk	Reversed	
10,300	"	"	"	"	"	"	"	1	"	"	"
31x31 pixels	Ok	V= 4.99	C55	Image Aquisit'n View, carefully focused					seeing test	sl windy?	
"	"	7.20	G8 VI	"	"	"	"	"	" "	no wind	
.3530 3500	"	"	"	BC	1200/508	BS	IIaO-e	1	Asm Sp kk	broken 2 pcs (T=53°f)	v sl wk
3000 2006	Poor	6.8	G8 V	"	"	"	"	1	"	set 583 T=50°f	Comp ok fine
30,200	"	2.2	A5 III	"	"	"	IIIaJ-eGy	1	"		"
							IIIaJ-eGy				"
10,500	Ok	V= 5.45		BI Image Aquisit'n		View			seeing test	(no wind)	
35,000	so so	3.68	F0 IV	BC	1200/508	BS	IIIaJ-eGy	1	Asm Sp kk		Comp ok Fine
10,500	Ok	3.93	K2 III	"	"	"	IIaO-e	1	std vel	T=47°f	" "
31x31 pixels	so so	V 4.6	A4	Image	Aquisition	View			Seeing Test	(no wind)	

9

THURS./FRI.

Date MAY 26-27/88 Observers T.N. - N.S.R.

Dev MAY 31 87

Dev Jan 1 Tu

Emulsion Batches:

II a O-e 2A7 - APR 28

III a-eg 1A7 - APR 25

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50272	HD 8890	01 22.6	+88 46	00 53	00 58	E	+89 22	Fe Arc	1600
								CLEAR	1600
50273	"	"	"	01 03	01 07	09 20E	"	"	1680
FM0000 53.TN	HD 156891			01 30		00 04W	+39°	x4 for	Int
FM0000 54.TN	"				01 32	00 06W	"	"	"
50274	HD 159561 α oph.	17 30.3	+12 38	01 38	01 44	00 12 W		Fe Arc	2240
								CLEAR	2300
50275	HD 182640	19 20.5	+ 2 55	01 53	02 26	00 56 E	+3 16	"	1700 1900 2100
50275 T	Spot Calib for	50274-75+50276-77		80 (next night)		15 min @ 04	17.5V 3900	15V 4300	15V 4810
50275F	Focus test			02 35		00 55W	+4 46	Fe Arc Clear	4000 4000

Spectr. Temp. 60°F..... Dome Temp./Hum. +13°C/50% Transparency Conditions HAZY...-CLOUDY.....
VERY LIGHT
BREEZES SW.

Focus....390.....

Spectr. Temp. 60°F..... Dome Temp./Hum. +13°C....

Exp. Mtr. B=OG F=TG	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
10800	OK	2	F	BC	1200/ 50.8	BS	II aO-a	1	Asm Sp HK	SPOT CAL'd #5026ST	✓ OK
10200	OK	"	"	"	"	"	"	"	"	" " "	✓ OK
	OK	Image Acquisition mode			3/×31	finds			Seeing Test	Can be deleted - Sumeas 1st 4	on 5th Tk
	OK				"	"			" "	4 frames + 4 frames	
33 000	OK	2.2	A5III	BC	1200/50.8	BS	IIIaJ·eSg	1	Asm Sp HK		
16,400 16,300	OK	3.68	F0IV	"	"	"	IIIaJ·eSg IIIaJ·eSg	1	"	clouds	
				BC	1200/50.8	BS	IIIaO	1		T=60° Set 390	21 Red

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FRI. / SAT.

Date MAY. 27-28/88.. Observers ..T.N.. N.S.R.....

Dev Jun 1 Tn

Emulsion Batches:

Mea.Reg. JAT.- APR 25

Dev MAY 31 Tn 1.56,0.24 H.a.O.e. JAT. MAY.25

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50276	HD 86360	09 52.9	+12 55	20 33	22 55	05 03 W	+12 24	Fe Arc CLEAR	←
50277	HD 112028	12 48.3	+83 +83 58	23 08	02 09	05 33 W	+83 22	Fe Arc CLEAR	1700 1750 1730
F Moon 55 FM	"	"	"	02 13			"		
50278	HD 8890	01 226	+88 46	02 27	02 42	07 42 E	+88 21	Fe Arc clear	1680 1700
50279	"	"	"	02 44	02 55	07 29 E	"	Fe Arc CLEAR	1660 1730
50279T	Spot Calib	for 50278-79,81			15 min @	D4 15V 3400	D3 4300 D7 4810		
50280	HD 159561	17 30.3	+12 38	03 03	03 14	01 44 W	+12 44	Fe Arc clear	2300 2300
50281	HD 161096	17 385	+4 37	03 20	03 35	01 59 W	+	"	1900 1800
50281F	Focus test			03 40		"	"	"	3400 8500

Spectr. Temp. ...73°...F.... Dome Temp./Hum. 18°C./40% Transparency Conditions HAZY...-...CLOUDY.....

Focus.....387.....

Spectr. Temp. 65.5°...F..... Dome Temp./Hum. 15°C./60%

Exp. Mtr.	Blue Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1600	17 125											
1700	5 500	OK	5.22	B9 IV	BC	1200/50.8	BS	IIIaJ afg	1	SB - Bln	REVERSED / CLOUD	
1700												
17 000		OK To POOR	5.28	B8	BC	1200/48	BS	IIIaJ afg	1	Shell - Bln	" [Brt one of Pair] "	S/wk
17 17 pm		sso	"	"	For Scale of Image			Aqua View		"	Cloudy	
10 300		off	2	F	BC	1200/50.8	BS	IIaO-e	1	Asm Sp kk	v cloudy	v wk
9 200		"	"	"	"	"	"	"	1	"	"	"
								IIaO-e				" "
35 000		OK	2.2	A5 III	BC	1200/50.8	BS	IIIaJ afg	1	Asm Sp kk	cloud	OK
8200		"	3.88	K2 III	"	"	"	IIaO-e	1	std/vel	"	
					"	"		IIaO	1		set 387	OK

13 Fiber Fed Reticon - 1st Try with Fiber Feed for Reticon (Some ECHELLEX prompts are meaningless in this Con. Equation)

Emulsion Batches: .....

Date MAY 30/31, 1988 Observers TJ

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat					0 0	platform	Tung clear	600sec
	Flat			205852		"	"	"	"
	Flat (not kept)			210950		"	"	"	"
	1st Comp								
	Alpha Boo			21 5528	21 5956				
	Alpha Boo			22 0107	2214				
	" "			22 1519	2222				
	" "			2223	2234				
	" "			2235	2252		Comp at end	Echelle clear	300sec
Filson 58 Tau	" "			23				3 FRAMES	
59 Tau	MIZAR (For Image acquisition Scale)				2315			4 Frames	
60 Tau	" (For Fiber Feed Head Scale)				2322			4 Frames	
61 Tau	" (" " ")				2325	02 15W		6 Frames	
	Flat			2354		0 0	platform	Tung clear	600sec
	Long DARK			00 08					3600
	Long DARK (after topping up)			07					1800 sec

Spectr. Temp. ..... Dome Temp./Hum. 47°/50% Transparency Conditions ... Cloudy - prob. clear 14

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 49°/55%

Exp. Mtr. - Counts	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1534/5K				Kelicon		BS	Hd		4 Å/mm		
1537/5K				"		"	"		"		
1500/2K										Small pocked Emu	
1452/2K											
										Cat Kept - spot on L. bin	
										" " pin-hot tube	
52/1K										Re-guid - mt kept	
70/1K									Zeiss type		
1459/200									(SI Zeiss type)	CK	
47×47	OK	Just			Image spectrum wide				Out of Focus (Donut) Astigmatism Test		
31×31	OK	(4× on Indicator)								could be for seeing test too?	
55×55	"	(4× on Int.)				Fiber mod	(Upper right star is faint & both below slot)				
"	Cl	(" ")		1st 4	one reject of 60.	1st 2 Frames have stars				straddling slot.	
505/5K				Kelicon		BS	Hα		4 Å/mm	Temp = -4.983	
27/1K										" -4.977	

15
N

Tues-Wed PCS Pg #1

Date MAY 31 / June 1 / 88. Observers T.a. - N.s.

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Long Flat			15 41 58	17 41 59	0 0	platform	Tung A=1/16	7200s
	Solar Spectrum	0 0	platform	19 36	20 16 44				1800 +600
	Long Comp			20 24 25		W	+36 13 20	FeA Clear	600
	HD 95735	10 57.9	+36 38	20 55	21 25	02 43 W	"		1800
FM0000 62 TN	"	"	"	20 46	21 25	W	"	4 frames	Int x4
FM000 63 TN \ DSS	"	"	"	20 50		W	"	"	"
	"	"	"	21 26	21 56	03 14 W	"	Coat Of Island	1800
	Comp @	end of	HD 95735			"	+ "	FeA Clear	2400
1003	HD 132737	14 59.4	+27 12	22 10	22 40	00 02 W	+27 22		1800
64 TN	"	"	"	22 42					
65 TN	"	"	"	22 46					
	Comp	" 1900	1900	22 44					240
1005	HD 144287	16 00.0	+25 30	22 57	23 27	E +			1800
1006	"	"	"	23 28		W			1200
	Comp	"	"	23 54					400

Spectr. Temp. ..... Dome Temp./Hum. 76°/60% Transparency Conditions ..Hazy.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Wave Length Buffer Chiller Temp

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					PCS	1800/52°	BS	5000A	1A	-01.1°C (19:33)	Upper Left RoIF is odd	
50-300	/				"	"	"	"	1B	-1.3°C	Tel covered (mostly)	
88	15				"	"	"	"	1A	-1.5°C (21:03) -1.6°C (21:30)		
250	16	Fair	V= 7.60	Pb	"	"	"	"	1A	Abs Spike	* As 1 of 3 5-40 counts Astigmatism test	
47x47		"	"	"	CA Tel focus image (switch to the right)						Astig test	
31x31		"	"	"							seeing test	
200	17	OK	"	"	PCS	1800/2	BS	5000A	1A	Abs Spike	Cont of 1st exp. 1st written thought	
					"	"	"	"	1B	Stellar	Hazy	
150	12	5050	V= 8.0	KOA	"	"	"	"	1A	Stellar	* " [Kept Dec nods to continuum]	
										Seeing test	Guide View Fiber Feed Head	
										Seeing test		
									1B	* Note 1A's DEC — little	Tungsten Aquisition Set is not this very Nasty	
300	22	OK	V= 7.07	KSI					1A	Abs Spike	* Very little RA or Dec Set on tungsten guiding	
400	16	OK	"	"					1B	"	Aggressive RA guiding	
80	11								1B			

17 Pg 2

Emulsion Batches: .....

Date May 31 June 1 '88 Observers J.n/NSF ....

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Plate No.	Object	R.A. 1900 ~~1950.0~~	Declination 1900 ~~1950.0~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1008	HD 171232	18 32.1	+25 29	00 10 20	00 40	01 25 E	+		1800
	COMP.	"	"	00 45 20	00 51 40				400
1010	HD 171232	18 32.1	+25 29	00 58 19	01 28 25	00 39 E	+25 40		1800
	Comp	"	"	01 30 15	01 36 55			Fe-A Clear	400
6.TN	HD 171232	"	"	01 35				4 Frames	4 x Int
1012	HD 195987	20 29.4	+41 32	~~01 45~~ 02:17	02:47	E	+		~~1800~~ 1800
	COMP	"	"	02 48 39	02 55 19			Fe-A CLEAR	400
7.TN	HD 195987	"	"	02 51		01 15 E	+	4 frames	4 x Int
8.TN	"	"	"	02 55			"	"	"
	Flat Field	while moving telescope		03 02	03:32	Signal strength changed with Hr L		Tungsten A=1/16	1800
	Long DARK	started		03 50	05:51				7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum 72°F / 84%

Exp. Mtr A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
185 / 14	OK	V= 7.73	G81 III			BS		1A	std vel	TRACKING KEPT TO ABSOLUTE MIN. (ONLY R.A. TRAIL)	
82 / 10	OK					"		1B			
250 / 18	OK	V= 7.73	G8 III			BS		1B	std vel	[redacted] VIGOROUSLY TRACKED (GUIDED) FOR DURATION OF EXP.	
80 / 12						"		1B			
31 x 31	SOSO			(Image Acquisition view)					seeing test	Slightly gusty	
450 20	OK	V= 7.01	G4V	PCS	1800 52	BS	52.8	1H	Ch. a = -1.58 transp. kit	as high as 600 counts/sec	
80 / 10											
31 - 31	OK	"	-						seeing test		
47 - 47	"	"	"						Astigmatism	test, Out of Focus switch to the Right	
1390 / 50					1800/52	BS	52.8	1B			
					"	"	"	1A			

ROFFAR

17 19

Wed-Thurs

Date June 1-2/88 Observers T.A.:Mar

Emulsion Batches:

Pl	Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp
	#1016	Flat (while opening & setting on 1st star)				20 56 25			Tung H=1/16	1200
		1st Comp (Long)	1988.5		21 00 07			+69°	Fe A Clear	600
	69.TN	BS 5299	14 07.5	+43 55	21 18		00 20 E	+44°	4 Tung	x4 Int
	70.TN	"	"	"					4 Filters	x4 Int
		Long Flat	(while closing up)				0 0	pointing	Tung A=1/16	3600
		~~Comp~~ HD 144287	16 000	+25 30	22 41	23 11		Comp 1st +25 25	Fe A Clear	1800 400
	71.TN	HD 144287	"	"	2236		C1 00 E	"	4 Tung	Int x4
		"	"	"	23 1238	23 4240		"		
		Comp @ end	"	"						400
		~~HD 149162~~	~~16 27.9~~ 1955.5	~~+3 28~~				+		1800
		HD 140913	15 44.7	+28 30	00 03	01 03	01 45 W	+28 43		3600
		Comp							Fe A Clear	400
		HD 171232	18 32.2 1988.5	+25 29	01 13 40	02 13	00 08 W	+25 38	"	3600
		HD 195987	20 29.4 1988	+41 32	02 24	02 54	01 09 E	+42 02	"	1800
		LAST FLAT	(while closing)		03 04				Tung A=1/16	1800

Spectr. Temp. ..... Dome Temp./Hum. +67°/70% Transparency Conditions . Cloudy - Clearing fast 20

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +62°/70%

Exp Mtr A	Exp Mtr B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. Buffer	Program	Remarks	Quality
1600	75				PCS	1800/5°	65	5000 Å	IA			
82	16								IA			
		poor	V= 5.2I	M4.5						Seeing Test	Cloudy NW wind slightly Image Against Wind	
		poor	"	"						Astigmat. Test	" " "	
1800	80								IA			
~~30~~ 30	~~28~~ 28											
~~70~~ 70	~~40~~ 40	poor	V= 7.0I	G8V					IA	Asm Sp KK	WRITTEN	
		poor	"	"						Seeing Test	↓	TI FWM
		"	"	"					IA	Asm Sp KK	Cont of 1st exp	
									IB		w/ like setting	
40	10	Very poor	V= 9.1	dK0					IA		Tracking (discontinued)	
80	10	Very poor	8J	G0V					IA	std vel		
1000	13								IB			
70	15	very poor	V 7.7	G8III					IA	std vel	[Comp (400 sec) Between]	
230	9	"	7.1	G9V					IB	Asm Sp KK	Comp @ end 400 sec	
1600	75								IA			
											OVER →	

21 #2

Emulsion Batches:
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Date June 12 1955 Observers JH .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Fm 0000 72.TN	HD 195987	1955 20 39.9	+41 32	02 56		01 00 E	+42 02	4 fiducials	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

FWHM

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										1.7 + 50 guiding.	
4×Int	Pox	7.1	G9L						Seeing Test	Image of star in view	6"2

23 #1 Fri-Sat PCS work

Emulsion Batches: .....

Date Jun. 3-4/88 ..... Observers N.S.-T.T. .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
1034	2nd Long Flat	(During	daytime)		2 18 56	0 0	platform	Tungsten A: GG495	4 hrs
not written I guess.	Long Comp			19 55	20 05	"	"	Fe A Clear	600
73.Tn	BS 4945	13h 01m 22s	+45° 48'		~~19 5~~	≈ 0 0		A frame	Ax
74.Tn	BS 4945	"	"					"	Ax
35	COMPARISON	10h 57m.9	+36° 38'			~~3 0~~ 0		Fe A Clear	400
36	HD 95735	10h 57m.9	+36° 38'	20 54 16	21 24 16	02 55W			1800
37	COMPARISON	"	"	21 25 19	21 31 51			Fe A Clear	400
SF001038NB	HD 134439	15h 09m 08s	-16° 15'	21 32 28	22 32	00 05E			3600
39	Comp			2233				Fe A Clear	400
40	HD 132737	14 59.4 (1988.5)	+27 12	22 43	23 13	0098W			1800
41	Comp							Fe A Clear	400
75.TN	HD 144287	16 00.0	+25 30	23 19		00 13 ~~29~~ E		A frame	X4
42	"	"	"	23 22	23 52	00 20 W			1800
76.TN	"	"	"	2355				4 frames	X4
43	Comp	"	"	2356					400

Spectr. Temp. ..... Dome Temp./Hum. +15°C / 68% Transparency Conditions ..Clearing from NNE

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1800/50°	BS	103a-J			with Cu	
125 15								1B			
31x31	good									SEEING TEST	5".4
47x47	good									ASTIGMATISM TEST	
								1B			
350/18	GOOD	V= 7.6	Mb					1A	Asa Spect	LIGHT INTERMIT. CLOUDS AT BEGINNING OF EXP.	
80/18								1B			
32/5	GOOD	V= 9.02	K0 II					1A	Asa Spect		
88/10								1B			
250/15	OK	V= 8.0	K0 III					1A	Std/UCL	some cloud	
								1B			
	OK	V= 7.07	G8 II						seeing test		4".8
550/20	"	7.1	G8 III					1H			
39X39				Note	Fiber Head View				seeing test		3".0
100/6								1B			

25 Pg #2 PCS - WORK Emulsion Batches:

FRI. - SAT.

Date JUNE 3-4/88. Observers TN/NSR

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
44	HD 149287	16h 00.m0	+25° 30'	00:04	00:39	01 05 W	+25 26		1800
45	COMPARISON	" 1988.5	" 1988.5	00:38	00:45			FeA CLEAR	400
46	HD 171232	18h 32.m2	+25° 29'	00:47:45	01:17				1800
47	COMPARISON	" 1988.5	" 1988.5	01:18	01:25			FeA CLEAR	400
48	HD 171232	18h 32.m2	+25° 29'	01:27	01:57				1800
49	COMPARISON	" 1900	" 1900	01:38	02:05			FeA CLEAR	400
10,50	HD 195987	20h 29.m4	+41° 32'	02:07	02:37				1800
SP00051.MT3	COMPARISON	"	"	02:41	02:47			FeA CLEAR	~~400~~
FM0000TTN	HD 195987	"	"	02:46		E			

PC hung up at end on "Clear Buffer" prompt.
(Last Command noted was "B" (Remnant of "CB")

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 44°F / 80%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	BOT-KAR P.H.	Program	Remarks	Quality
180/16	FAIR TO GOOD	V= 7.07	G8 V	PCS	1800/52°	85	5000 Å	1B			
85/7								1B			
250/12	OK	V= 7.7	G8 III	"	"	"	"	1A	std vel	Chiller T= -30°C	
80/7								1B			
300/12	OK	V= 7.7	G8 III	"	"	"	"	1A	STD. vel.		
92/7											
300/17	FAIR TO GOOD	V= 7.09	G9 V	"	"	"	"	1A			
80/7		"						1B			
31 x 31		"	"	Image	Agn view				seeing test		5.0"

27

Wed-Thurs

Date JUNE 8-9.1886 Observers T. & J. Nast

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP001055	Long Flat Shrs					0 0	platform		
1056	Long Comp				19 42 56	"	"	Fe A clear	600
FM000078TN	HD 123782 13 Boo	1988.5 $14^h 07^m 51.3^s$	1988.5 $+49° 30' 49''$			$\simeq$ 0 30 E	+49 41		x4
FM000079TN	"	"	"						x4
FM000080TN	"	"	"						x4
1057	COMPARISON	"	"	20:57	21:09			Fe A CLEAR	400
1058	HD 123782 13 Boo	1988.5 $14^h 07^m 51.3^s$	1988.5 $+49° 30' 44''$	21:07	21:37	00 23 W			1800
1059	Comparison (95735)	"	"	21:38	21:45			Fe A clear	400
1060	HD 95735	1900 $10^h 57^m 9$	$+36° 38'$	21:47	22:17				1800
1061	COMPARISON	"	"	22:18	22:24			Fe A Clear	400
1062	HD 124752	1900 $14^h 10^m 3$	$+68° 03'$	22:29	23 29	02 11 W	+67 49		3600
FM000081TN	Comp (not written I guess)							Fe A clear	300
TM000082TN	HD 144287	1900 16 00 0	+25 30	23 40		W	+		x4
SP 1063	"	"	"	23 41 42	00:41 45	01 33 W	"		3600
1064	COMPARISON	"	"	00:44	00:49			Fe A CLEAR	300

Spectr. Temp. ..... Dome Temp./Hum +10°C. / 62% Transparency Conditions ..Clearing.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

28

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion wavelength	P.H. Outfit	Program	Remarks	Quality
				PCS	1800/52°	BS	5000Å	IA		units.	
140/19								IB		units	
31x31	5050	V= 5.25	M2 III ab						s/ gusty	SEEING TEST	6.0
47x47		"	"						out of focus switched to moving star	ASTIGMATISM TEST	
31x31?	5050	"	"							SEEING TEST FIBER HD VIEW	4.5
115/11								IB			
340/89	poor	V =5.25	M2 III ab					IA	St/Vel	1st print thru cloud -15.61	
125/13								IB			
135/13		V= 7.60	[redacted] MK					IA	Asm. Sp	-29.92	
115/15								IB			
96/9	poor	8.2	K0					IA	Asm Sp	-10.20	
100/12								IB			
31x31	5050	7.1	CaK						Seeing test	Image Agnostic	
350/25	"	"	"					IA	Asm Sp	-9.26	
120/14								IB			

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Emulsion Batches: .....

Date . JUNE 8 & 9/88. Observers . . T.N./N.S.R. .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP00106~~5~~6	HD 147379	$16^h 16.^m6$ 1900	+67° 28'	00:51	01 51	02 30 W	+67 27		3600
1066	COMPARISON	〃 1988.5	〃 1988.5	01:52	01:57			FeA Clear	300
67	HD 171232	$18^h 32.^m2$	25° 29'	02:00	02:40	W	+25 38		3600
1068	COMPARISON	〃 1900	〃 1900	02:41	02:46			FeA CLEAR	300
FM0000~~8~~2.TN	HD 195987	$20^h 29.^m4$	+41° 32'	02 45		00 50 E			
1069	HD 195987	$20^h 29.^m4$	+41° 32'	02:49	03:29		+42 01		2400
1070NTA	COMPARISON	〃	〃	03:31	03:36			FeA CLEAR	300
SP 00 107INTA	Long Flat	(On timer)		3:40	5:40	0 0	platform	Tung A-1/16	

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Some Cloud .....

Focus ..... HK Seeing tests Reduced on printer. 30

Spectr. Temp. ..... Dome Temp./Hum 17°C / .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion WAVELENGTH	P.H.	Program	Remarks	Quality
80 / 7	FAIR TO 1000	V= 8.63	M0 V	PCS	1800 / 52°	BS	5000 Å	iA	1sm sp	-5.18	
120 / 12				"	"	"	"	iB			
300 / 18	FAIR TO 4000	V =7.7	G8 III	"	"	"	"	iA	STD. VEL.	as high as 5550 7.94	5" 6
120 / 14				"	"	"	"	iB			
	OK	V= 7.09	G9 V	"	"	"	"		Seeing Test	No wind 15.00	On Best
550 / 34	GOOD	V= 7.09	G9 V	"	"	"	"	iA.	Asm Sp Kk	Const. & high as 7550	
105 / 10				"	"	"	"	iB		14.87	
				"	"	"	"	IA			

Emulsion Batches: .....

Date JUNE 9 & 10 / 88 Observers NSR - TG .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP0010T2.NT5	Long Flat					0 0	platform	Tung A=1/16	720s
73.NT5	Long FeA Comp					"	"	FeA Clear	1200
FM000083.TN (13 Boo)	HD 123782	1988.5 14h 07m 51s.3	1988.5 +49° 30' 44"	20:30		00 40E		4 Frame	4x
SP00194.NT5	COMPARISON	16h 3m.5	+25° 25'	20:38	20:43			FeA CLEAR	300
~~FM 084.NT5~~	HD 144287	16 00.0	+25 30	20464A	21:17	01 50 E			1800
SP0010T6.NT5	COMPARISON	"	"	21:18	21:24			FeA CLEAR	900
1077.NT5	HD 112956	12h 55m.2	+69° 19'	21:30	22:30	02 32W	+68 38		3600
1078	COMPARISON	"	"	22:32	22:38			FeA CLEAR	900
1079	HD 124752	14h 10m.3	+68 03'	22:41	23 03	01 51 W	+67 31		1350 ~~3600~~
1080.NT5	Long Comp	~~Cable unwrapping~~		23 21 23		0 0	~~H0°~~		600
1081.NT5	Flat			23 34		0 0	platform		3600
FM000084.TN	HD 171232	1988.5 18h 32m.2	1988.5 25° 29'	00:58				4 Frame	x4
1082	COMPARISON	" 1988.5	" 1988.5	00:54	01:01				900
83	HD 171232	18h 32m.2	25° 29'	01:03	01 50	0 15W			
84	Comp								450
85	LONG DARK					0 0	Platform		7200

Spectr. Temp. ..... Dome Temp./Hum. +10°C/60%

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +6°C/85%

Transparency Conditions Clearing ... Cloudy again ... 32

Note - guiding with image s/l below slot gives much higher count rate than if centered on slot.
Buffer I noticed this last night too. Doc independent too

Exp. Mtr A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion Wavelength	P.H.	Program	Remarks	Quality
250/200				PCS	1800/52°	BS	5000 Å				
120/10											
	OK	V= 5.25	M2 IIIaJ	Image	Aquisition mode				Seeing Test	SKY STILL QUITE BRIGHT. Slightly gusty	
116/14				PCS	1800/52°	BS	5000 Å	1B			
400/30	OK			"	"	"	"	1A	Asm Sp kk	Sky s/l bright a few cts above dark at 1st.	
				"	"	"	"	1B			
400/30	OK	V= 8.2	G6	"	"	"	"	1A	Asm Sp kk	Aglint as 650 cts Reversal - some cloud	
120/12				"	"	"	"	1B			
220/15	FAIR	V= 8.2	K0	"	"	"	"	1A	Asm Sp kk	Still Reversal Ha Heel in cloud	
				"	"	"	"	1B			
				"	"	"	"	1B		Chiller Bath T = -28°C	
	POOR	V= 7.7	G8 III						Seeing Test	EXTENSIVE CLOUD COVER. (no wind)	
[illegible]/10								1B			
260/18	POOR	V= 7.7	G8 III	"	"	"	"	1A	Std_vel	EXTENSIVE CLOUD COVER Heltec 0150	
140/11				"	"	"	"	1B			
								1A			

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Fri - Sat

Date June 10-11/88 Observers Mki - Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
86	Long Flat								
87									
88	Comp Long								
1089	Sky @ Dusk								
Fin 85 TN	HD 122693	14 024	1988.5 12437				+24 48	4 frames	x4
	Comp						"		300
	HD 122693	1988.5 14 024	+24 37	21 00 52	21 21		"		1200
	Comp								400
	AW UMa B	1987 11 29.4	+30 02	21 47	22 15	03 50W	Ha Hed		3600
	Comp	(Superimposed on 1988 previous stellar spectra)							400
	FO Vir	1938 13 29.4	1988 +01 08	22 32 34	22 52	02 20W			1200
	Comp								400
	HD 141232	18 322	+25 29	23 05 30	23 35 32	01 53E			1800
	Comp				23 43				400

Spectr. Temp. ..... Dome Temp./Hum 11.3°C / 60% Transparency Conditions ..OK – cloudy..... 34

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS	1800/53°	B5	5200Å				
	OK	V= 8.2	F8V						Seeing Test	Image Again mode	
	"	"	"								
250/25	"	"	"					1A	std/Vel	NE of Pair, Sep 210'	
								1B			
90/9	OK	V= 9						1A	Diff.	some cloud faint comp	
								1B			
300/50	OK	V 6.7	K7V					1A		cloud	
83/10	"							1B			
250/20	"	V= 7.7	G8III					1K		cloud (as high as T50)	
								1G			

Date June 10. 11. 188... Observers M.K. + T.G.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
99	BM CASS			23 51 40	00 52	E	+		3600
1100	Comp (Labeled BM Cass)								
1	BM CASS			01 01 32	02 01	05 45 E	+64 10	+	3600
2	Comp							F&A	
3	HD 171232	18 32 2	+25 29	02 21 31	02 47	01 17 W			1480 1500
4	Comp (Long)								500
5	Flat	(while closing)							3600

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions Cloudy

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +11°C / 60% Chiller T = -3.0°C

Exp. Mtr A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
100 15	5080			PCS	1800/53	BS	5200Å	IA			
								IB			
200 20	ok	V= 9						IA		Cont of 1st Exp.	
								IB			
250 15	ok	V 7.7	G8III					IA	Stilvel	cloud thin/thick	
								IB			
2750/250								IB			

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Emulsion Batches:
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Date JUNE 13TH-14TH/88 Observers ...T.N./N.S.R.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
1106	Long Flat					00 00	Platform	Tungsten A=1/16	7200
7	[redacted] COMPARISON			20 04 ~~19:18~~	20 24 ~~19:38~~	00 00 ~~00 00~~	PLATFORM	FeNe 1/8 Aper.	1200 ~~1200~~
8	Sky Spect 13 B00	1988.5	1988.5	19 28	19 48	"	"		
FM00000 86TN	HD 123782	14 07.9	+49 31	20 36		00 20E	+49 40	4 Frames	X4
9	HD 123782	"	"	20:49	20 59	00 05W	"		600
10	COMPARISON	"	"	21:01	21:04	"	"	FeNe 1/8	200
11	HD 95735	$10^h 57.^m9$	+36° 38'	21 0636	21:37	03 47W	+3617		1800
12	COMPARISON	"	"	21:38	21:41			FeNe 1/8	200
13	AW UMa B	1987 $11^h 29.^m4$	1987 +30° 02'	21:40	22 40	4 24 W	+3012		3600
	COMPARISON	"	"	~~22~~:49	22:49		"	FeNe A=1/8	300
FM00008 7TN	HD 140913	1988.5 $15^h 49.^m7$	1988.5 +28° 30'	22:50		0 29W			
15	HD 140913	"	"	22:52	23:22	0051W			1800
	COMPARISON	"	"	23:23	23:26			FeNe A=1/8	200
	NGC 6543 (PN)	1988.5 $17^h 58.^m8$	1988.5 +66° 38'	23:32	00 32	0014E	+6648		3600
	COMPARISON			0034					2

Spectr. Temp. ..... Dome Temp./Hum. +25°C / 40% Transparency Conditions Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... note * Of ND Filter Before Comp Lamp

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	Buffer P.H.	Program	Remarks	Quality
				FCS	831/395	BS	Hα	iB			
480/20								iB		∫ In Reverse order (with Hα)	
								IA			
31x31 Pixels	OK	V= 5.25	In 2 D-6						Seeing test	Image Acquisition Viewer used manually	4.8
800/20	"	"	"	"	"	"	"	iA	Std Vel	DELIBERATELY KEPT OFF MAX. COUNT POSITION (STAR TOO BRIGHT).	
450/23	"							iB			
1100/45	"	V= 7.60	Mb	"	"	"	"	iA	Asm Sp KK	as high @ 2900 cnts	
450/18								iB			
165/11	FAIR TO GOOD	V= 9		"	"	"	"	iA	Mk. pgm		
450/21								iB			
	GOOD	V= 8.2	GO Σ	"					SEEING TEST		4.4
700/28	GOOD	"	"	"	"	"	"	iA	STD. VEL.	Dome T = +22°C Chiller T = -27°C	
450/24								iB			
35/6	GOOD	V= 8.7	Em	"	"	"	"	iA		middle ≈ centered	
				"	"	"	"	iB			

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39 pupe #2 cont

Emulsion Batches:

Date Sept 13-14/86 Observers D.S.: T.m

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
#1	BM CASS	00 53.9	+64 00 36	00 42 37	01:12 40	06 20 E	64 08 +64 00		1800
	COMPARISON	"	"	01:14	01:17			FeNe A=1/8	200
#2	BM CASS	"	"	01 ~~16~~ 21	01:51	E	+64 00		1800
	COMPARISON	"	"	01:54	01:57			FeNe A=1/8	200
#3	BM CASS	"	"	01:58	02:28	05 09 E	+64 00		1800
	COMPARISON	"	"	02:30	02:33	"	"	FeNe A=1/8	200
#4	BM CASS	"	"	02:36	03:06	04 31 E	+64 01		1800
	COMPARISON	"	"	03:08	03:11	"	"	FeNe A=1/8	200
FM000088.TN	BM CASS	"	"	03:11		04 26 E	"	4 frames	4x
#5	BM CASS #5	"	"	03:14	03 44	03 53 E	+64 01		1800
	COMPARISON	(while closing)		03:45					200
	Long Flat					0 0	platform		7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. Still. Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +20°C / 60% 40

Exp. Mtr. R	Seeing	Ptg. Mag.	Sp. Hd	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. Editor	Program	Remarks	Quality
100/6	OK	9	Em	PCS	831/39.5°	BS	Hα	IA	Mk. pgm		
330/18	"	"		"	"	"	"	iB			
220/6	OK	"		"	"	"	"	iB	mk. pgm		
370/21	"	"		"	"	"	"	iA			
140/11	"	"		"	"	"	"	iA			
370/22	"	"		"	"	"	"	iB			
180/12	"	"		"	"	"	"	iB			
380/22	"	"		"	"	"	"	iB			
31x31	"	"		"	Image Agus	Hα			seeing test	sl windy	
180/12	8850	"		"	"	"	"	iA		cats as high as 300	
380/25				"	"	"	"	iB			
1400/75				"	"	"	"	iB			

Emulsion Batches:
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Date JUNE 14TH - 15TH /88 Observers .... TN / NSR .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1131	LONG FLAT			15:25	18:25	00 00	PLATFORM	TUNG A = 1/16	10800
32	COMPARISON	1988.5 $14^h 07.^m9$	1988.5 $49° 40'$	20:27	20:32			FeNe A = 1/8	300
FM000089.TN	(13 BOO.) HD 123782	1988.5 $14^h 07.^m9$	1988.5 $49° 36'$	20:30		00 21E		4 FRAMES	×4
33	"	"	"	20:38	20:48	00 03E	$49°33'$		600
34	COMPARISON	"	"	20:49	20:52			FeNe A = 1/8	200
35	HD 95735	1900 $10^h 57.^m9$	1900 $+36° 38'$	20:56	21:16	03 30W	+3605		1200
36	COMPARISON	"	"	21:17	21:20			FeNe A = 1/8	200
37	AW UMa B	1987 $11^h 29.^m4$	1987 $+30° 02'$	21:22	21:22	04 09W	+3005		3600
38	COMPARISON	"	"	22:23	22:26			FeNe A = 1/8	200
1139	A 1874 A	1900 $16^h 55.^m1$	1900 $+47° 31'$	22:31	23 01	00 39E	+4725		1800
40	Comparison	"	"	2305					
41	A 1874 B	"	"	231428	00:18				3600
42	COMPARISON	"	"	00:19	00:22				200
FM000090.TN	A 1874 C	"	"			00 45W		4 FRAMES	×4
43	A 1874 C	"	"	00:27	00:57				1800

Spectr. Temp. ..... Dome Temp./Hum. +27°C/39% Transparency Conditions . Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... note - On B1874, I did many H + Hs IR's

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS	831/395	BS	HK	iA			
410/25				"	"	"	"	iB			
Pixel #'s 31×31	GOOD	V= 5.25	M2 III ab	Image Analysis Mode					SEEING TEST		4.3
300/145	GOOD	"	"	"	"	"	"	iA	STD. VEL.	DELIBERATELY KEPT OFF MAR. COUNT POSITION. (OWING TO STAR'S BRIGHTNESS)	
910/25								iB			
1050/50	GOOD	V= 7.60	M6	"	"	"	"	iA	Asm Sp- KK		
420/31				"	"	"	"	iB			
175/13	GOOD	V= 9		"	"	"	"	iA	Mk pgm		
410/26				"	"	"	"	iB			
950/38	GOOD	V= 8.0	K8	"	"	"	"	iA	Asm Sp- KK	TRIPLE SYSTEM. STAR WITH COMPONENT B (@ 12TH MAG.) (CLEARLY DISCERNIBLE) WAS STUDIED FIRST. STAR = A.	
400/27	FINE			"	"	"	"	iB	"	Attempt at Fnt comp	blank
410/5	"	≈12		"	"	"	"	iA	"	Sudden "noise"	
380/24								iB		Spike is noticed @ 2350. near H+K	
Pixel #'s 31×31		V= 8.0		Guiding View					SEEING TEST		2".4
920/39	GOOD	"		"	"	"	"	iA			

Emulsion Batches:
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Date JUNE 14TH-15TH/88 Observers ...TN./NSR.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1144	COMPARISON	$16^h 55^m.1$	+47° 31′	00:59	01:02	[illegible]	[illegible]	FeNe A=1/8	200
45	(CH CYG) HD 182917	$19^h 21^m.9$	+50° 02′	01:04	01:34	00 39 E	+50° 15′		1800
46	COMPARISON	"	"	01:36	01:39	00 30 E	+50° 15′	FeNe A=1/8	200
47	(CH CYG) HD 182917	"	"	01:41	02:11	00 05 W			1800
48	COMPARISON	"	"	02:12	02:16			FeNe A=1/8	200
49	BM CASS #1	1986.3 $00^h 53^m.9$	1986.3 64° 01′	02 23	02:53	04 40 E	+64° 02′		1800
50	COMPARISON	"	"	02:56	02:59	04 437 E	"	FeNe A=1/8	200
51	BM CASS #2	"	"	03:02	03:32	04 04 E	+64° 02′		1800
1152NT7	COMPARISON	"	"	03:33		04 01 E	"	FeNe A=1/8	200
1153NT9	Long Flat 2hrs	(while closing sanfrancisco)							
1154NT8	Long Dark	written @ 0744 PM June 15/88.							

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . SOMEWHAT HAZY .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../65°/0

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	Baffle PH.	Program	Remarks	Quality
/				PCS	831/39.5°	85	Hα	iB			
920/45	6000	V=7.0 V=9.1	Mb	"	"	"	"	iA	Obs Pgm		
705/25				"	"	"	"	iB			
780/35	6000	V=7.9 V=9.1	Mb	"	"	"	"	iA			
385/32				"	"	"	"	iB			
170/15	6000	V≈9	Em	"	"	"	"	iA	Mt. Pgm		
380/36								iB			
170/17	6000	V≈9	Em	"	"	"	"	iA			
380/31				"	"	"	"	iB			

45

Emulsion Batches: .....

Date JUNE 15TH-16TH/88 Observers T.N./N.S.R. .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1155.NT8	Long Flat					0 0	platform		
1156.NT8	DARK			2209	0009	0 0	"		
1157.NT8	COMPARISON	1988.5 $18^h\ 32.^m2$	1988.5 $25°\ 29'$	00:18	00:23			FeNe A = 1/8	300
FM000091.TN	HD 171232	"	"	00:25		$00^h\ 40'E$	$25°\ 30'$	4 FRAMES	×4
1158NT8	HD 171232	"	"	00:28	00:58	$00^h\ 10'E$	$25°\ 30'$		1800
1159NT8	COMPARISON	"	"	01:11	01:15			FeNe A = 1/8	200

Spectr. Temp. ..... Dome Temp./Hum. +20°C / 80% Transparency Conditions ..Clearing ~ gusty.....

Focus ..... Chiller Temp = -1.3°C 46

Spectr. Temp. ..... Dome Temp./Hum. +18°C / 80% * Note Mirror cooler air coming in first. ∴ Worst possible seeing

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS	831/39.5°	BS	H∝				
				"	"	"	"				
410/35				"	"	"	"	iB			
Pixel = 5 39 × 39	VERY POOR	V = 7.7	G8 III	Guiding View					SEEING * TEST	SEEING QUITE POOR, GUSTY & CLOUDY	
190/17	POOR	"	"	"	"	"	"	iA	STD. VEL.		
390/35				"	"	"	"	iB		MORE Cloud	

47 Thurs - Fri Pg #1

Emulsion Batches:

Date JUNE 16TH - 17TH /88 Observers TN / NSR +0.6 ND

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1160	LONG FLAT			≈18:30	≈19:30	00h 00'	PLATFORM	TUNG. A = 1/16	3600
	2ND FLAT			20:03	21:03	00h 00'	PLATFORM	TUNG. A = 1/16	3600
FM0000?2.TN 62	(13 Boo) HD 123782	1988.6 14h 07.9	1988.5 +49° 31'	21:05				4 FRAMES	×4
	1ST COMPARISON	"	"	21:07	21:11	00h 30' W	49° 32'	FeNe A = 1/8	200
	(13 Boo) HD 123782	"	"	21:12	21:22				613
	2ND COMPARISON	"	"	21:24	21:27			FeNe A = 1/8	200
66	(RX Boo) HD 126327 (1ST)	1900 14h 19.m7	1900 +26° 11'	21:29	21:49	00h 49' W	25° 47'		1200
	COMPARISON	"	"	21:50	21:53	00h 51' W	"		200
66	(RX Boo) HD 126327 (2ND)	"	"	21:56	22:19				1200
	Comp	"	"	22:20	22:24			FeNe A = 1/8	200
	(CH CYG) #1 HD 182917	19h 21.m9	+50° 02'	22:27	22:57	03h 00 E	50° 16'		1800
	COMPARISON	"	"	22:58	23:01	02h 57 E	"	FeNe A = 1/8	200
	(CH CYG) #2 HD 182917	"	"	23:03	23 33				1800
	Comp	"	"					FeNe A = 1/8	200
	CH Cyg #3	"	"	23 39					1800

Spectr. Temp. ..... Dome Temp./Hum. 40°F/68% Transparency Conditions INTERMIT. CLOUD.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	Buffer PH	Program	Remarks	Quality
				PCS	831/39.5°	BS	HOX	1A			
1530/147				"	"	"	"	1B			
Pixel = 1 32×39	POOR TO OK	V= 5.25	M2 III.6	GUIDING VIEW					SEEING TEST	SCATTERED CLOUD, BREEZY	
380/32	"			PCS	831/39.5°	BS	HOX	1B			
810/32	"	V= 5.25	M2 III.6	"	"	"	"	1A	std vel	COUNTS AS HIGH AS 1900 WHEN STAR OUT OF CLOUDS	
390/30	"			"				1B			
700/50	"	V_max 7.0 V_min 9.1	M8	"	"	"	"	1A	CH Cyg Std	STAR'S APPARENT BRIGHTNESS INDICATED IT MUST BE NEAR MAX. V (Counts as high as 900)	
415/33				"	"	"	"	1B			
460/29	POOR	"	"	"	"	"	"	1A	CH Cyg Std	THIS WAS A 1200 SEC. CONTINUATION OF THE ABOVE SPECTRA IN BUFFER	1A
390/35				"	"	"	"	1B			
350/35	FAIR	V_max 7.1 V_min 9.1	M6	"	"	"	"	1A	Obs pgm	Near beginning, Hα looked "SPLIT", LIKE BRIGHT Hα	
410/35				"	"	"	"	1B			
330/26	FAIR → POOR	"	"	"	"	"	"	1B		Counts to 480 at times	
				"	"	"	"	1B			
	POOR	"	"	"	"	"	"	1A			

49 Pg. #2

Emulsion Batches:

Date JUNE 16TH - 17TH/88 Observers TN/NSR

7.0.6 ND

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	COMPARISON	$19^h\ 21.^m9$	+50° 02'	00:10	00:13			FeNe A = 1/8	200
	BM CASS #1	$00^h\ 53.^m9$	+64° 00' 36"	00:19 ~~00:21~~	00:49	$05^h\ 24'E$	64° 02'		1800
	COMPARISON	"	"	00:51	00:54	$05^h\ 21'E$	"	FeNe A = 1/8	200
	BM CASS #2	"	"	00:57	01:27	$04^h\ 48'E$	"		1800
	COMPARISON	"	"	01:28	01:31	$04^h 45'E$	"	FeNe A = 1/8	200
	BM CASS #3	"	"	01:33	02:03	$04^h\ 15'E$	"		1800
	COMPARISON	"	"	02:05	02:08	$04^h\ 10'E$	"	FeNe A = 1/8	200
	BM CASS #4	"	"	02:11	02:41	$03^h\ 37'E$	"		1800
	COMPARISON	"	"	02:44	02:47	$03^h\ 31'E$	"	FeNe A = 1/8	200
	HD194071	1988.5 $20^h\ 22.^m1$	1988.5 +28° 13'	03:00	03:30	$00^h 35'W$	28° 14'		1800
FM00093.TN	"	"	"	03:32				4 FRAMES	x4
	COMPARISON	"	"	03:39	03:39				300
1186?	Long Flat			03 4/38		0 0	platform	Tung H = 1/16	7200

Spectr. Temp. ..... Dome Temp./Hum. 38°F/76% (00.05 e.s.t) Transparency Conditions ..... fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

50

Exp. Mtr. A | B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	Bottom P.H.	Program	Remarks	Quality
430/34				PCS	831/39.5°	85	HIL	1B			
90/12	POOR	V≈ 9	am	"	"	"	"	1B			
405/38				"	"	"	"	1A			
90/13	POOR FAIR	V≈ 9	am	"	"	"	"	1A			
390/28				"	"	"	"	1B			
100/11	"	"	"	"	"	"	"	1A			
380/30				"	"	"	"	1B			
95/11	FAIR	V≈ 9	am	"	"	"	"	1A			
390/30				"	"	"	"	1B			
250/24	FAIR	V= 8.13	G8 III	"	"	"	"	1A	STD. VEL.	Counts as high as 470	
Pixel w/s 39×39	POOR	"	"	Guide	View	"	"		SEEING TEST		
390/26				"	"	"	"	1B			
	+0.6 ND					"	"	1B			

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Fri-Sat

Date June 17-18/88. Observers Mk i-Tn

Emulsion Batches: .....

.....

..... + ND .06

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	~~Long Flat~~								
	Dusk Sky								
1186 ~~AFOSR~~	MK2 Flat Field	1988.5	1988.5	2035		while setting up		Tung 11=1/16	1800
	1st Comp	18 32.2	+28 30	21 08		E	A=1/16	Comp FeNe	200
	~~HD 171232~~ 2nd Comp	"	"	2120			no ND	FeA Clear	200
89	HD 171232	18 32.2	+25 30	21 37 39	22 08	02 55 E	+25 29		1800
	Comp						ND 0.6 in	FeNe A=1/16	200
	HD 126327	1900 14 19.7	+26 11	22 14 47	22 39	01 45 W			1400
	Comp							FeNe A=1/16	
	CH Cyg HD 182917	19 21.9	+50 02	22 48 34	23 18	E	+50 16		1800
	Comp						"	FeNe A=1/16	200
95	HD 171232	1988.5 18 32.2	+25 30	23 36	00 06	~~E~~	+25 29		1800
~~Moon 94 TN~~	"	"	"	00		~~E~~	"		
	Comp								200

Spectr. Temp. ..... Dome Temp./Hum +7°C / 60% Transparency Conditions ... Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. (Buffer)	Program	Remarks	Quality
				PCS	~~1800/395~~ NOT POSSIBLE	BS	Hα				
1400/160								IA			
25/17								IB			
122/38								IA			
400/27	OK	V= 7.7	G8 II					IA	Std Vel	as high as 850 counts	
130/22								IB			
100/130	OK	V= 7						IA	CH cyg Std	Prob near Max mag as high as 2900 counts	
130/30								IB			
600/20	Fine	V= 8	M6					IA	Obs pgm		
127/17								IB		PS2 CRASH Before Comp	
400/38	OK	V= 7.7	G8 III					IA	Std Vel		
	"	"	"	Guide View					Seeing Test		
								IB			

53 #2

Emulsion Batches:

Date June 17-18 1988 Observers mkc-TH

N.D. 0.6 ~~Indian~~

Plate No.	Object	R.A. ~~1900~~ 1988	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	PU VUL	20 20.7	+21 32	00 23 55	~~2~~ 01 00	01 57 E	+21 33		1800
	Comparison				01 08			Fe NE A=1/16	200
	BM CASS*	00 53.9	+64 01	01 09	01 21	E	+64 02		~~1800~~ 1200
	Comp	"	"	01 22					200
	BM CASS #1	"	"	01 27	01 57	05 28 E	+64 02		1800
	Comp	"	"						
	BM CASS #2	"	"	02 03	02 34	E			1800
	Comp							Fe NE A=1/16	200
	HD 171232	18 32.2 (1988)	+25 30 (1988)	02 48	03 32	02 30 W	+25 30	~~260~~	~~2600~~ 2200
	COMPARISON								200
	Long Flat	(on timer)		03 39					3 hrs

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. F. to P. .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +15°C / 70 % Buffer

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
200	20	OK			PCS	~~Red~~ 345	BS	Hα	IA	Mki pgm		
									IB			
250	17	OK	V= 9						JA	Obs-pgm	Ha Ha! [Prob* Cont by PU VUL	
									IA		(ie PU VUL + BMCASS]	
250	20	OK	V= 9						IA	Obs pgm		
									IA			
300	20	OK	V 9						IA	Obs pgm		
									IA			
700	34	OK	V= 7.7	G-8[illegible]					IA	std vel	All now 12x counts to 1500 as fast as before?	
									JA			
1500	140								IA			

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Tues-Wed

Date Aug. 2-31.88 Observers Tn - KK - Nsr

Emulsion Batches:
IIa-O ... 1A7 ... MAY 25
2.64, 0.17 IIIa-J-eg ... 1A7 ... Aug 2 17 hrs
8m 72 ? IIa-O-e ... 1A7 ... July 25 ... for my eyes

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50282F	Focus Test	[Manual	Mode]			2 01 30W	-2+47	1c NE Clear	4min 2min
~~50282~~				~~22:12~~	~~22:14~~			~~Fe Ne Clear~~	~~2min~~
50282	HD 186791	1988.5 $19^h 45.^m7$	1988.5 $+10° 35'$	22:18	22 Tn ~~23~~:54	00 20E	+10 36	FeNe Clear	2min 2 min.
50283	HD 182640	1900 $19^h 20.^m5$	1900 $+2° 55'$	23:11	01 07	02 12W	+3 06	FeNe CLEAR	3 MIN. 3 min.
50283T	Spot Calb for (POLARIS)	50283,	8687	15 minute	D4 17.5V 3900	15V 4300	15V 4810		
50284	HD 8890	$01^h 22.^m6$	+88 46	01 25	01 36	E	+89 10	FeNe CLEAR	2min. 2min.
50285	"	"	"	01 50	01 57	0404E	"	"	2 min 2 min
50286	HD 209790	22 00.9	+64 08	02 12	03 45	0208W	+6436	"	3 min 3 min

Spectr. Temp. 82°f ..... Dome Temp./Hum. +27°c/80% Transparency Conditions ... hazy - cloudy 56

Focus ... 384 .....

Spectr. Temp. 78°f ..... Dome Temp./Hum. +24°c/92%

Exp. Mtr. B Either	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2000											
8580	Poor			BC	1200/5008	BS	IIIaO	1		Diffuser up	Center 51 Red
1000											
10400											
1043	"	V:	K3III	BC	1200/5008	BS	IIaO	1	Std Viel		
1585/1750	Amb→	B:								(5 Aq.)	
1595/1758	1050	3.68	F0III	BC	1200/5008	BS	IIIaJ-eg	1	Asm Sp-kk	Some cloud	weak
1580							IIIaS-eg				" "
9379/9646	FAIR										
196/9380		2	F	BC	1200/5008	BS	IIaC-e	1	Asm Sp-kk		"
9380	"	"	"	"	"	"	"	1	"		"
18330	OK	1.63	A3m	"	"	"	IIIaJ-eg	1	Asm Sp kk		weak
18660											

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WED. THURS.
Date .AUG...3-4./88. Observers ....T.N./N.S.R.....

$4\frac{3}{4}^m$ 71° Emulsion Batches:
IIaJ-exp. 1H7... August 17hrs
IIaD-e....1H7...J4125
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50287F	FOCUS TEST (α Oph.)								
50287	HD 159561	$17^h 30.^m3$	+12° 38′	20:38	20 50	0009E	+12° 32′	Fe Arc CLEAR	
50288	(POLARIS) HD 8890	$01^h 22.^m6$	+88° 46	21:27	21:36	$08^h 20^m$ E	+89° 12′	Fe Arc CLEAR	1850 1300
50289	〃	〃	〃	21:46	22:13	$07^h 42^m$ E	+89° 12′	Fe Arc CLEAR	1600 1600

Spectr. Temp. 85°f ..... Dome Temp./Hum. 83°f / 70% Transparency Conditions ... Hazy 58

Focus ... 382 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

D. Hoser in

Exp. Mtr. & Filter in	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1200/50.8	8S	IIaO	1			Streak OK
3300 3000 | 35500	FAIR	B= 2.2	A5 III	BC	1200/50.8	8S	IIIaJ-eg	1	Asm Spkt	VERY HAZY & SOME CLOUDS	weak
9200	FAIR TO POOR	2	F	"	"	"	IIaOe	"		"	OK
8900	POOR	"	"	"	"	"	"	"		"	OK

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5m 67°

Emulsion Batches: IIIa.F-Rfg. 2EO 16hs 25 fg 9hrs

Date AUG. 8 & 9/88 Observers TN/NSR (use 4m next Time) 3t, 0.83, 0.71 Diffuser In

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	(α Oph.)							FeNe	3400
50290	HD 159561	17h 30m.3	+12° 38'	22:47	22:53	2h 13' W	+12° 10'	CLEAR	3400
50291	"	"	"	23 01	23:07			"	3400 3300
	(δ Aql.)								30 sec
50292	HD 182640	19h 20m.5	+2° 55'	23:13	23:31	1h 00' W	+3° 02'	"	30 30
						15 V04	7V D2	D3	
50292T	Spot Calib for 50290-92			15 min -	4810	Hg	5450		

Spectr. Temp. 80° F ..... Dome Temp./Hum. 77°/70% Transparency Conditions ... GOOD - Cloudy 60

Focus 384

Spectr. Temp. 80° F ..... Dome Temp./Hum. 75°/83%

Exp Mtr No Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
98 700	GOOD	B=	A5		1200/ 58.2	BS	IIIa F-2	1	Astr Sp - Tilt	* wrong angle	No comp Sp OK Fe No str
	2.2	2.2	III	BC							Str
100 400	"	"	"	"	1200/ 40.5	"	"	"	"		Str
50 300	GOOD	B=	FO							Some clouds.	Failed str
50 300		3.68	IV	"	"	"	"	"	"		Str
							"				

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Wed-Thurs

Date Aug. 10-11/88.... Observers ...T.n.....

IIIa-Ej dev Aug 14
5 min @ 68°F

Emulsion Batches:
3t, 0.71, 0.63 IIIa-EJ 2.E.0. Jy 625 9hrs fgas
2.89, 0.22 IIIa-EJ 1.A.7 Aug 2 (diffusor in .....no filter

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50293	α Oph HD159561	17 30.3	+12 38	20 22	20 29			FeNe Fe arc Clear	
50293T	Spot Calib	"	"		15 min @	15V D4 4810	17V D2 Hz 5450	17V D3	B filter
50294	HD159561	"	"	20 38	20 51	00 18W		Fe Arc Clear	2600 4400
50295	HD182640	19 20.5	+2 55	21 02	23 11	00 47W	+3 03	"	3700 3600
50295T	Spot Calib for 50294-95.				15 min @ D4	17.5V 3900	15V 4300	15V 4810	

Spectr. Temp. 80°F Dome Temp./Hum. 76F / 80% Transparency Conditions .. Semi Clear 62

Focus ... 384 Humidity in Wm Rm = 50%

Spectr. Temp. ..... Dome Temp./Hum. ..... / 80%

Exp. Mtr. no Other	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
70000	?*	2.2	A5 III	BC	G-1270 1200/405	BS	IIIaF-ecg	1	Asan Sp-Kit	* CCD comera POOR	✓
							IIIaF-ecg	1	"		✓
60000	?	2.2	A5 III	BC	G-5430 1200/507	BS	IIIaJ-ecg	1	"	End of plate broken off S1/str	✓
20000 $1000		365	F0 IV	"	"	"	"	1	"	Cloudy	✓
							IIIaJ-ecg				✓✓

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Sun-Mon

Date Aug. 14-15/88 Observers Tn Fds

174, 143

Emulsion Batches: 098-e02 985- Aug 11/88

Diffuser IN

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50295F	Focus and Exp test			21 15		04 00E	+21 20	FeNe	60
	Tucas	~~00 23 37~~	~~+51 00 2~~	~~05 50 49~~				Clear	30
50296	TU Cas HD210398	1950	1950	20 47	22 23	W	+51 12	FeNe	7 sec
		00 23.6	+51 00	~~00 50~~	~~02 26~~			Clear	7 sec
50296T	Spot Calib	for 50296-97			15 min	15VD3 4810	7VD1 Hd	7VD2 5450	
50297	Tucas HD210398.	1950 00 23.6	+51 00	22 27 ~~02 36 25~~	23 50 ~~3 53.~~	W	+51 12	FeNe Clear	7 sec ~~7 sec~~
				Clock Time - 5 hrs.					
	in Main Building 4:39.00 = 8:42. in dome			1:97. → 3:23.					
				3:27 → 4:53 EST					
1210 1211	Hartmann test								
1212	Flat				600s				
1213	"				600s				
1214	Dark				3600s				
	1 hr flat left running								

Spectr. Temp. 84°F ..... Dome Temp./Hum. 85°F / 70% ..... Transparency Conditions Thunderstorms 64

Focus ..383.....

Spectr. Temp. 77°F ..... Dome Temp./Hum. 72°F / 90%

Coelostat (Blank (a))

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6400 4885				BC	G=4270 1200/40.5	BS	098-e	1	TUCAS Ha Emission	(Alig/4 Det with IIIaJ) Carter	S/Red S/str
6914 6524	poor	6.5→ 8.5	F3I F5II	BC	1200/40.5	BS	098-e	1	Ha Em.	semi clear	V wk ✓
							098-e				✓ ✓
23886	ok		F3II F5II	BC	1200/40.5	BS	098-e	1	Ha Em	clear	wk ✓
				PCS	180/52°						

65

Wed-Thurs 1st Night with 200u Fiber Feed.

Emulsion Batches: .....

Date Aug 17-18.88.... Observers .KK-TM..... (* Note, Times are Daylight Savings Time.)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	1hr Flat Fld							ND 1.2 A 1/16	3600
	Long Comp	3 00 ~~300~~ 1988	Secs	20 42 *		0 0		FeA Clear	300sec 300sec
	HD 171232	18 32.2	+25 29	21 03	21 33	0 33 E			1800
	Comp			21 3353				FeA Clear	300
	A 1874 A	1900 16 55.1	+47 31	21 46 56	22 16 59	01 51 W	+47 21		1800
	Comp							FeA Clear	300
	HD 195987	20 29.4	+41 32	22 2851	22 58 54	30 56 E	+41 50		1800
	Long Comp							FeA Clear	600sec
1223	HD 194071 *	~~1989.5~~ 20 22.2	~~1989.5~~ +28 13	23 20	23 50	0 01 W	+28 11		1800
	Long Comp (Last)			23 5126					600sec
	Long Flat Field (on timer)			0004		0 0	(ND 1.2	Tung A 1/16)	7200 ~~3600sec~~

Spectr. Temp. ..... Dome Temp./Hum. 76°F / 80% Transparency Conditions Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 76°F / 98% Wm Rm H= 70%

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					PCS	1800/52°	BS	5000A	1B			
380	18								1A		Chiller @ +1.0°C	
800	35	Sso	V= 7.7	G8III					1B	Std/Vel	some cloud	
									1A		Wrest of 2 stars in Finder (close)	
300	10	poor	V= 8.0	K8					1B	Nsm Sp-kk	Star with faint comp	
180	7								1A		Wm Rm H= 58% Chiller=1.0C	
650*	35	OK	V= 7.09	G9V					1B	Nsm Sp-kk	Very hazy as high as 1000 counts	
350	14								1A			
500 →100	20	OK	V= 8.13	G8III	(500 cts in clear hazy sky)				1B	Std Vel	*Field some Cloud	
200	8								1A			
2100	70								1A		Time was only set for 200s added another 600s OK	

67

Thurs-Fri

Date Aug 18-19/86 Observers Tn/MK-Tn PCS

Emulsion Batches:

changed PST to EST

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1	Flat						(ND 1.2)	Tung (U/16)	1/2 hr
	2nd Flat						"	"	1/2 hr
	1st Long Comp			19 53 47	20 03 47		clear	FeA clear	600
	HD 171232	~~17 46.5~~ 18 32.2	~~1984.5~~ +25 29	20 44 57	21 04	00 09 W			1200
	Long Comp							FeA clear	600
	HD 171232	18 32.0	+25 29	21 19 30	21 39 30	00 44 W	+25 28		1200
	~~Hong~~ Long Comp							FeA clear	600
	HD 195987	20 29.4	+41 32	21 54	22 24	00 31 E	+41 51		1800
1233	Comp							FeA clear	600
	TU VUL								
	grating Steps of 20 done & recorded								
	BB) Cass	1986 00 53.9	+64 01	22 59 40		W	+64 01		
				03 27					
1250.	Flat — 3800 Å	200 s at end of observations (timer was set for 200 s, although							
1251-2	Hartmann test							FeA	180

Spectr. Temp. ..... Dome Temp./Hum. 68°F/67% Transparency Conditions Semi Cloudy

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					BC	1800/5220	BS	5000Å			Slightly diff Tilt than previous night.	
		poor										
450	10	very poor	V= 7.73	G8III					IA	std vel	part cloud / as high as 800 mostly cloudy	
300	15								IB			
500	15	very poor	V= 7.73	G8III					IA	std vel	Clear now - (to 700cnts)	
320	10								IB			
550	20	poor	V= 7.09	G9V					IA	Hsm Sp Kk	as high as 850cnts	
300	11								IB			
					Good	em line @ Stp 595					Mapping the Spectrum	
					Many	em lines @ Stp 535 (1 strong one)					(Stepping Grating) @ Step 595?	
120	4		V= 9.0									
120	4					Stp 555						
integ time was 7200)					added another 3600 this morning KK							

69 #1

OBSERVING

Date Aug 19-20/88 Observers KK - resting / T.n - KK

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1253-4	Hartmann test pair, after 5 steps refocus (=0.1 mm 'A')							FeA/clr	180
~~1254~~	~~Long comparison~~								
1255-6	Hartmann Test pair after refocus to "best" position (−0.22 mm 'B')							FeA/clr	180
1257	Long comparison	(600s)						FeA/clr	600
1258	Long Flat							ND1.2	7200
1259	Long Comp			18 53	19 03			FeA Clear	600
1260	(Solar Diffuse, Scattered)			19 16	19 46	0 0	platform	Comp Posn	1800
1261	Comp			19 49	19 54			FeA Clear	300sg
1262	HD 144287	16 00.0	+25 30	19 56	20 16	W	+25 15		1200
1263	Comp							FeA Clear	300
1265	HD 147379	16 16.6	+67 28	20 28	20 53	2 14 W			1500
66	Comp								300
1267	H173740 (B)	1988.6 18 42 39	+59 36.9	21 01	22 01	00 58 W	+59 35		3600
1268	Comp								
1269	HD173739 (A)	18 42 39	+59 36.9	22 09	22 39	01 36 W			1800

Spectr. Temp. ..... Dome Temp./Hum 68°/65% Transparency Conditions . Sl. hazy 70

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				BC	1800/53°	BS	PCS				
					"	"	"			focus exact in center	
300+					"	"	"				
320 / 10											
240 / 9								IA			
300 / 9								IB			
1000 / 30	OK	V= 7.07	G8V	[note, may have written 2x (Yes, I did Ta)]				IA	Asm Sp kk	Can see high as 1200	
230 / 9								IB			
250 / 10	OK	V= 8.63	M0V					IB	Asm Sp kk		
350 / 7								IA			
100 7	OK	V= 9.69	dM5	BC	1800/53	BS	5000Å PCS	IB	Asm Sp kk	Faint one South of pair	
280 8								IA			
140 10	OK-fair	8.90	dM4					IB		North one of pair	

71 #2

Emulsion Batches:

Date ..... Observers ..Jn.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
70	Comp								
71	HD 171232	1988.6 18 32.2	+25 29	22 48	23 07	W			1200
SP001272	Comp	1988.6							300
1273	B M CASS	00 53.9	+64 01	23 34	00 04	E	+64 00		1800
1274	Comp							Fe A Clear	300 sec
1275	BM CASS	00 53.9	+64 01	00 18	00 39	2 35 E			1200
1276	Comp						NO 1.2 +	FeNe A 1/4	300
1277	FeNe	@ ≈ 580 steps from		Y limit			"	A 1/2	90
1278	"	≈ 595					"	A 1/4	140
1279	"	610					"	"	150
1280	"	625					"	"	150
1281	"	640					"	"	150
1282	"	655						A 1/2	150
	"	637	Went down	18 steps to H2 hopefully				"	150
SP001283 KKT	Flat (on timer)						NO 1.2	Tung A 1/16	7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 56°/80%

Exp. Mtr A	Exp. Mtr B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
300					BC	1800/53	BS	5000Å PCS	IA			
300*	16	ok	V= 7.73	68mm					IB	std vel	as high as 1000 cnts	
300	6	ok										
200	6	ok							IA		as high as 250 cnts	
								5000Å	IB			
140	5	ok	(as high as 200 cnts)		BC	1800*/62°	BS	Hα	IA		≈110 steps (V) From 5000Å	
200	10								IB			
300												
240												
260								Note: Upon stopping grating to Hα, I				
270								noticed a larger signal/ around 5800Å				
180								I didn't have time to look from Hα				
225								(30 down from Hα strong signal)				
600		Yes, In back. Not written										
1700/40									IB			

13

mon-Tues

Date AUG 22-23 88 Observers TA

Emulsion Batches: IIIa-J 2.35, 0.36 098-02E 985 - Aug 11/88

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50298	CH Cyg HD182917	19 21.9	+50 13	19 59	20 59	00 33E	+5011	FeNe Clear	7-7-7
50298T	Spot Calib for 50298					15min@	15V D3 7V 4810 Hx	D1 7V D2 5450	

Spectr. Temp. 68F Dome Temp./Hum. 65F/65% Transparency Conditions Part cloudy - Cloudy

Focus 386

Spectr. Temp. 67F Dome Temp./Hum. 58F/1

DS Short Blue (11)

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
13200 500	OK	V2 8	Mb	BC	G 2270 1200/40.5	BS	098-E02	1	Observatory	750 cuts for 7 sec comp Cloudy	V
							098-E02				--

75

Thurs - Fri

Date Aug. 25 - 26/88 Observers T.m.

Emulsion Batches: IIaO-e 147 Jul 22

Off out

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50299	HD182917	19 21.9	+50 02	20 50	21 01	00 12 E		IE Clear	330 0

Spectr. Temp. 67°F Dome Temp./Hum. 65F/75% Transparency Conditions Clear, hazy — 70

Focus 3.88

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. *	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4500	OK	9mm	M6 Hgr	BC	1200/508	BS	IIaO-e	1	Obs pgm	Cloud; Looking like Rain	VVV+
* No filter used: No counts at all with Blue filter, Blue used for initial Fe arc counts though.											
CH Cyg looked very Red; maybe more Red than last night observed.											

77

Fri Sat

Date Aug. 26-27/88 Observers Tuq... Lug(some).....

8m 68s 1.78, c.29

Emulsion Batches: D.a.O.-C. IA7. July 22

.....

.....Diffuser In

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50300	CH CYG HD182917	$19^h 21.9$	+50° 02	19 55	22 39	01 18 W	+50 11	Fe Arc Clear	990 **
50300T	Spot Calc for 50299–50302				15 min @ 15V	D4 3900	D3 4300	D2 4810	Blue Filter
50301	HD 203156	21 15.4 1988.6	+37 49	22 46	23 37	00 24 W	+38 09	Fe Clear	1650
50302	HD 171232	18 32.0	+25 29	23 44	01 17	04 52 W	+25 27	"	1500 1730

Spectr. Temp. 67°F ..... Dome Temp./Hum +64°F / 75% Transparency Conditions Fine - s/haze 78

Focus .... 388 .....

Spectr. Temp. 64°F ..... Dome Temp./Hum. +58°F / 90% [Fe Arc ≃ 40 secs for 1500 cnts with Diffuser in.]

DC filter

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
42,200					G=5430						
42,010	OK	≃10?	Mb	BC	1200/50.8	BS	IIa0-e	1	Obs pgm	* ≃3906 Fe Arc ≃600 cnts without filter	w K
Blue filter							IIa0-e				v i
10,300	Fine	≃6	FG	BC	1200/508	BS	"	1	Ceph-Rr	2 comps beg + end	OK
2600	"	~~Y~~ 793	~~GBG~~	"	"	"	"	1	st/vel	(Same one used for PCS)	Fe s/w K w K
	Well, I forgot how slow this would be photographically. "Very fast on PCS."										

79 Mon-Tues

Date Aug. 29/30/88. Observers ...Tn.....

5m 680 Emulsion Batches: III.a.e.fg. 147 Aug 25
2,53,0,14

23 hrs gas

cuts

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50303	HD137909	15 23.7	+29 27	19 39	20 17	03 05W	+2907	Fe Arc Clear	1800 2840 1600
50303T	Spot Cals for 50303-06				15 min	@D4 3900 17.5V	4300 15V	13V 4810	
50304	HD 159561 20ph	17 30.3	+12 38	20 24	20 31	01 18 W	+	Fe Arc Clear	2600 2670
50305	HD 182640	19 20.5	+2 55	20 38	20 58	00 11 E	+03 03	"	2590 2570
50306	HD188041	19 53.3	-03 07	21 07	22 57	W	-3 11	"	600 2800
50306F	Focus test			23 08	23 14	W		FeNe Clear	400 1740 2280

Spectr. Temp. 65°f ..... Dome Temp./Hum. 76°f/80% Transparency Conditions .. Fine - cloudy 80

Focus ... 38.7 .....

Spectr. Temp. 63°f ..... Dome Temp./Hum. 75°f/93% Diffuser in for Comps

Blue filter

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
20 360 20600	OK	3.93	Fop	BC	G-5430 1200/5048	BS	IIIa-J	1	As-Sp kk		Comp's/wk 45/wk
							IIIa-J				✓ ✓
35600	OK	27	As III	BC	1200/5048	BS	IIIa-J	1	As-Sp kk		focus ✓
42135	"	3.68	FOE	"	"	"	"	1	"	DBL Exp]	~~✗~~
5390 44177	"	5.85 ~~Asp~~	Asp	"	"	"	"	1	"	some cloud	✓
(200 Secs for Comp)				"	"	"	IIaO	1	diffuser	OUT	Can't get Real

81

Ly/Tn Tour earlier (Saturn's Ring) ok

23 hrs Fogs

Emulsion Batches: 2912, 0.22 III a-J-ESG ... IAJ ... Aug 25

Date Aug. 30-31/88 .... Observers Tn .....

..... Diffuser OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comp Exp.
50307	HD 159561	17 30.3	+12 38	21 09	21 38	2 38 W		FeNe Clear	793 ~~400~~ 800 ~~1080~~ 1336 1100
50308	HD 182640	19 20.5	+2 55	21 45	22 23	1 19 W	+3 03	n	
50308T	Spot Calib	for 50307-08+09-16 15 min @ 17.5V 3900					15V 4300	15V 4810	

Spectr. Temp. 67°F Dome Temp./Hum. 47 / 85% Transparency Conditions Clearing 82

Focus 387

Spectr. Temp. 65°F Dome Temp./Hum. 58% / 95%

Blue filter

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
26 750										Fe Ne Optimo	
26 800	OK?	2·7	AS III	BC	1200/5088	BS	IIIa-J-Oa	1	Asm Sp-Kk	* 793 cnts = 99 secs 99 2×99 sec 99	Corr w K OK
25,200										130 sec corr at beginning	
27 800	poor	3·68	to II	"	"	"	"	1	"	180 mid 130 end	OK
							II				"

83

Thurs/Fri

Date Sept. 1/2/88 Observers TN

Emulsion Batches: 23hr Fogs
Mar. efg 147 - Aug 25
.....
Diffuser OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50309	HD159561	17 30.3	+12 38	20 08	20 26	0123 W		FeNe clear	1775 1730
50310	HD 182640	19 20.5	+2 55	20 35	21 18	0030 W	+302	"	1830 1800
FM000100.TN	"	Seeing Test		20 55	23x23 pixels	3 frames	+302		
DT000166TN	"	DRIVE Test (in "N" posn)		(0 frames Real time TN1)		0030 W	+302		160 Frms
50311	HD 209790	22 00.9	+64 08	21 41	23 26	0011 E	+6434	FeNe clear	1800 1800 1800
FM000101.TN	"	"	"	22 40	23x23	0055 E	for test		
FM000102.TN	" (Seeing test)	"	"	23 40		0000	+6434	3 Frames	

102.TN includes previous frames FM000101.TN

		XFWHM	YFWHM
FM000101.TN (Image acquisition mode)	Frame 1	1."768740	1."486567
	2	1."736539	1."907987
	3	1."758026	1."537399

~~FM000102.TN~~ ~~Frame~~ (Seeing test) Frames 1 thru 3 belong to the frames out of file 101 (see previous).

		XFWHM	YFWHM
FM000102.TN	Frame 1	1."768740	1."486567
	2	1."736539	1."907987
	3	1."758026	1."537399
(Possibly double star)	4	1."977383	2."018247
	5	2."033799	2."009622
	6	1."942687	2."096860

These frames belong to file 101.

Spectr. Temp. ..72°F..... Dome Temp./Hum. 70°/60% Transparency Conditions ....Hazy..... 84

Focus ...386.....

Spectr. Temp. ..70°F..... Dome Temp./Hum. 66°/70% CCD image quiet / Fixel today

Blue Filter

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
45500	Fair	2.2	A5 III	BC	1200/5088	BS	IIIa-J-hyp	1	HSmSp-kk	160 secs / FeNe comp	Comp/Lick OK
25305 03000	"	3.68	F0 III	"	"	"	"	1	"	(≈ 90 cnts FeNe in Stellar)	~~Faint~~ OK
	OK									Light SW breeze	
	OK	2.9	Leaving worm gear							during last comp	
21600 22100	OK	4.63	A3m	BC	1200/5088	BS	IIIa-J-hyp	1	HSmSp-kk		OK
	good	"	"	(Image Rotator mode during mid Comp)						Pixed 61 star	
DInT	OK	463	"	"		150μ	(CCD diagnostic tunnel in)			Slit View + Thrust Jockey	

85

Tues-Wed

1st {Reticon / Echelle} tests with 200u fiber feed

Date Sep. 6-7/88 Observers Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900 ~~1984.5~~ 1986.5	Declination 1900 ~~1984.5~~ 1986.5	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
3985	HD 124897	14 15.2	+19 14	19 23	19 29	04 00W	"		
4645	"			19 30 14	19 43				
	When doing "Plot" of previous records, I accidently tried to plot 3985 and program bombed								
4645	Vega	18 36.5	+38 46	20 01 42	20 09				
	Vega			20 10 46	20 30	W			
	Comp for Vega (Echelle source) (Prism out)							ThAR Flat Tung Clear	150sec
	Flat Field - Spect Contr i.e. source			do in stellar mode.				Tung Clear	60sec
	Vega	18 36.5	+38 46	20 41	21 11	01 20W			
	Flat Field							Tung Clear	60sec
	Dark	(Dark slide closed on Echelle)							1800sec
			1984.5						
Fm000	103. Tn BS7589	19 51 40.1	+47 00 00	21 35		00 32W	+47 00		
	104. Tn HD 194071	20 22 11.5	+28 12 45	21 50		00 20W	+28 13		
*	ReT.DAT (copied to diskett as SEP0788.DAT [HD ReT.Dat deleted OK?)								

Spectr. Temp. ..... Dome Temp./Hum. 57°F / 64% Transparency Conditions ..Clear.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 53°F / 80% slight (X GRATING 4102) Echelle Grat tilt 1.84

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
No exp meter guiding	poor	V= ~0.03	K2 III p	Echelle Reticon	x grating 4102	~~65~~	5700Å		T=-2.800	with 200u fiber feed	88/1000
									T=-3.312		
I restarted, but most parameters I guessed at.											
										Poor	54/1000
	So so	V= 0.03	K0 V		600, 5770	50u	5770	650u	T=-3968	600, 5770Å	482
		XFWHM	YFWHM		"	50u	"	"	T=-4160		
FM0001103.IN	Frame 1	2".332659	2".307532								
	2	2".501937	1".996415								
	3	2".759666	2".245799							OK Flat Field?	1000
FM0001104.IN	Frame 1	2".328348	1".983937						T=-4.266		609
	2	2".478595	2".043178								
	3	2".896677	3".003755								
									-4.375		
(Poor and variable seeing)											
31×31 pixels	-	Below	image of	200u	fiber	on	fiberhead			Seeing test,	
31×31	poor	V= 813	"	"	"	"	"			" "	
		Seeing test frames were the best of a few. Seeing was variable and sometimes extremely bad.									

87 Wed/Thur. Echelle Reticon *Echellex time = -1 hr from EST

Date Sept. 7-8/88 Observers K.H.-Ta

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	tungsten; 68S comp, 13tC THAr hollow cathode, 200D DARK;								
266C	Comp	THorium AR 1989.5							
332S	HD 124897	14 15.2	+19 14	19 34 34	20 02 43	Limit W		THAR	150 sec
398S	Flat Field in	S mode						Tung Clear	2 min
464S	" "	" "						"	90S
	B CorBor HD137909	15 27.3	+29 09	20 14 16	20 14 39	W		THAR 530C	3205cnts 60sec
	VEGA	18 36.5	+38 46	21 23 09	21 41 29				
728S	"	"	"	21 45 15	21 57 38				
	"	"	"	21 58 29	22 14				
	Comp			22 15				THAr	60
	Flat (Stellar mode) ~~x4~~ x2			22 17					~~30~~ sec
	Dark			22 23	22 53				1800
FP105.TN	HD194071	Fiberhead seeing test				01 10W	+28 13		
	Dark ~~attempt~~ 2nd attempt			22 55					1800

Spectr. Temp. ..... Dome Temp./Hum. +63°F / 68% H Transparency Conditions .. Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +35°F / 77% * Exp meter setup on 0th order Voltage = 1400V

Exp. Mtr. *	Seeing	Ptg. Mag.	Sp.	X grating	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							Centered Sodium D Lines			1.84 Echelle tilt	
					Tilt/Freq						
351	so so	0	t2 UT	.4013	600, 5890	50µ	5890Å		T=-2.933	Cold Box on Exp meter turned off for Readout	2812
1061											
833											3333
~~940~~	so so	393	Fop						T=-2.886	THAR - 3305 counts Picket fence!!	94 ~~3305~~
357	n?	V. 005	AOVa						Exp meter may be unstable. Picket fence		
250					XFWHM	YFWHM			T=-2.886	Oft this time	1307
266			FM00105.7m	Frame 1	2".719564	2".345000					1303
99				2	2".554102	2".305182					
				3	2".458019	5".518217					
264				4	2".401347	2".156000			T=-2.883		1128
(while closing up)									T=-2881	Picket fence (kept)	1357
Best frames after 1-4 trys.									T=-2873		
									T=-2.813	OK	18
									T=-2.786	after Topup in Estar heating effect	

89

Thurs/Fri

Date Sept. 8-9/88 Observers JBL-Tn

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	tungsten-halide (spect controller) (prob from echelle source)								
68D	DaRK								
134C	Comp Long			18 42				Th Ar Echelle	120sec
200S	Flat (From Spect Controller)			1850				Jump Clear	30sec
266S	HD 137909	15 27.3 (1989.5)	+29 09	19 18 a	20 18	03 45 W	+29 08		
332S	Flat (Spect controller)			20 20					
398S	Vega	18 36.5	+36 46	20 2440	20 3424				10min
464S	Vega			20 3555	20 5114				15min
530S	Vega ✓			20 5246	21 0732				15min
596S	Vega ✓			21 1245	21 2806				15min
662S	Vega			21 3120	21 4005				10min
728S	Vega ✓			21 4237	21 53	(not guided)			12min
794S	Vega			21 5526					

Spectr. Temp. ..... Dome Temp./Hum. 637/627 Transparency Conditions ... S/hazy ... 90

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

X meter cooler unplugged; not just "off"

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. X Grating	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					T:H Mrg		5840Å				
											31
											1474
	Poor ?	3.93	FOP	0.4013	600, 5880	50µ			T=+2340	Picket Fence	
		V= 0.05	HQTa								1496
									T=+2.325	~~OK~~ (Relent frosty)	1324
										" " "	1874
										Relent OK no pike	1194
	4Bs	g minimal guiding or focus,					no "P" for plot			" " "	493
	(4Bs	guide excessively,								Relent noisy + spike	592
	7Bs,	"P" for plotting +			Printing during integrate					No Noise	492
	"7Bs"	guided								Relent v noisy	

91 #2

Emulsion Batches: .....

Date ...Sept 8 9 1986.... Observers ...Tim..... .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
865S	Flat			2214					30sec
926C	Comp	Echelle Source		2226				THAR	120 sec
992D	DARK			2230					1800sec
	DARK								10000s

Many "DARK TST" done "S" mode, DARK SLIDE in for 10-40 secs,

Results. RA set ~~→~~ no noise - only 0-4 on PCS exp meter

Dec Set or Guide. always noisy - 10→65 on PCS " "

DOME TURNING → No noise - (Don't know about PCS Exp meter)

Clock DRIVE (ON & OFF etc → No noise on DARK int.)

Conclusions: I don't need any statistics to tell me that I can always induce a "Picket fence" on a short 10sec integration in "S" mode by excessive Dec setting or guiding; especially in Dec guiding. - Normal non excessive guiding in dec results in a noisy "Pat" or "Random start end noise with hump at the start. Always!

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.80%

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
											648.2
										s/hump & Reload?	31
										(T=-2.396 @ 23:13 EST)	
Testing various possible noise sources.											
Dec Guide for a 20 secs. produced "Picket fence." Note during last nights' [Dec Guide motion (Long axis), seems to give higher noise or PCS then Pic Set does by X2 [10-30 cnts]										"Picket fence" darks, I was using Dec guiding for seeing test.	
Note - Generator "ON" or "OFF" can cause "picket fence"										Turned	
→ Prob "Picket fence" effect on long normally guided exps is the result of accumulative noise or rare high noise from normal guiding.											
→ I don't know what can cause same effect in daytime testing.											

93

Emulsion Batches: .....

Date Sept 9/88 Observers KK – continuing previous night

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1356	SKY			~~9:07.5~~ ~~9:00~~	~~9:09.0~~ ~~9:07.5~~				
1322	SKY			9:09.8	9:13.2				
1388	SKY			9:15 ±	9:21				
	FLAT (S)							Tungsten	30s
1520	FLAT (S)							"	30s
1586	FLAT (L)							Tung (1/2)	60s
	FLAT (S)							Tung (1/2)	90s

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 94

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
warm			GOV	Echelle Reticon	600 .4012	50μ		1872 Ret	test		464
			"	"	"	"		"	"		1025
			"	"	"	"		"	"		1635
											1365
											1352
											1236
											464

95

Fri-Sat — Echelle Ref Work (Noise problem solved)

Date Sept. 9-10. 1986 Observers ..T.H.....

Epoch is 1989.5 except for HD137909

Emulsion Batches: .....

Plate No.	Object	R.A. 1900 / 1989.5	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	tung-halide Flat + 68S = Lamp 30 sec Full (Spect contrd-source)								
134C	Comp TH-A hollow Cath								
200D	DaRK								
266C	Comp							TH-AR	120sec
332S	HD124897	14 15.2	+19 14	19 29 14	19 45	4 30 W		Exp meter	V = 1401
398S	HD137909	15 27.3 (1986)	+29 09	19 51 30	20 45 48	4 22 W			
464S	Flat ~~TH-A~~ (Spec Contr source)			Tungsten	20 49				~50sec
430S	Vega	18 36.5	+38 46	20 57 25	21 16 15	1 40 W			
~~530S~~	~~Deneb~~	~~20 41.0~~	~~+45 15~~						
596S	Vega	18 36.5	+38 46	21 19	21 38	2 00 W			
662S	Deneb	20 41.0	+45 15	21 44	22 19	0 38 W			
728S	Polaris	02 14	+89 12	22 41	23 19 31	4 ≈ 20 E	+89 12		40 min
794S	Flat ~~TH-A~~ Lamp 30 sec (Spect Contr source) tungsten								
860C	Comp TH-A			23 33					120 sec
926S	TST accidently saved - slews effect of much focus motor running								

Spectr. Temp. ..... Dome Temp./Hum. +66 / 70% Transparency Conditions .. sl. hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +60 / 70%

CCD very noisy ∴ Till/Freq = 600, 5500

Brt satellite From WSW, terminator between Polaris & Cass.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks @ 20 37 Cosmos?	Quality
				E. Kelle Reticon	600/~~1335~~	50μ	5500Å	1872 Ref			
											29
219	?										
163	?	0	K2III						Std Ve/c spectrum	T=-2.860 some Dec guide needed	OK 1384
0	ok	4	F0p						Asm Sp- KK	T=-2.919 minimal Dec guide	OK 234
600											2480
218 +	?	0	A0Vs	(Is this added to previous Flat?)			(no probably)		Looks Flat	T=-2.959 ~~???~~ ->	3251
~~218~~									I guess it is flat there.		
218		0	A0Vq								2803
N/A	so so	V = 1.25	A2Iq							T=-2.965	1389
N/A	peak	2	F							T=-2.981 (hump @ Red end)	683
				note, the only "noise" noticed was the "hump" at Red end for Polaris exps							1141
											4092
									(backed up on disc)		

97 Tues-Wed Echelle Ref [Repeat of Last Fri for Comparison purposes]

Emulsion Batches: .....

Date Sept 13-14 88. Observers Tn ....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2,68	134,200L	Tungsten-halide		Flats during afternoon					
266D	DARK 1hr								
3325	HD 124897 (+Boo)	14 15.2 (1989.5)	+19 14	19 28 00	19 42 07	0444W			15min
398C	Comp		(1986)	194334				Th-Ar Echelle	120sec
464S	HD 137909	15 27.3	+29 09	194915	204746	0430W			
530S	Flat			20 5124	20 5225		Echelle	Tung	50sec
596S	Vega	18 36.5	+38 46	21 0404	21 3347				100
662S	Deneb	20 41.0	+45 15	21 4008	22 4047	0117W			78
728C	Comp			2242					120sec
S	Flat ~ 50 secs	[Spect Control Tungsten			23 00 49				
D	DARK			230452					1800
D	DARK Long	[all lights off; (nothing switched on or off after start]							3hrs

Spectr. Temp. ..... Dome Temp./Hum. 56°F 18% Transparency Conditions ... Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 49F 19% SI gusty vv bad seeing

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle Ref	600/ 4335	50μ	5500Å	1872 Hot			
									200L Looks OK, but others noisy?		
										Noisy, isn't it? 93/100 Flattened	
N/A	? poor	0	K2III						std vel	T=-3.137	742 OK
											3943 OK
	v bad	4	F0p						Asm Sp-Ktk	T=-3.126 some noise (hump)	109 ¾
Exp meter blocked)										T=-3.101	1989
100	vv poor	0	A0Ia							T=-3.109 (Ref hump)	1175
98	h	1	A2Ia							T=-3.105 OK	733
≥ 110										T=-3.115	1055
										T=-3.102	1903
										T=-3.102 OK	20
	Dewar topped just before start									T=-3.137 at start	
Note - this dark had the 1st appearance of the ½ picket fence effect that also appeared next night.											

c99 Wed-Thurs Echelle Reticon with 200u Fiber Feel

Date Sept. 14-15, 88 Observers K.K.-Tn

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
68 S	Flat							Tung/clear	30s
S	DARK (in Stellar mode)			19 1206	19 54				
266 S	DARK (" ")			19 5855	20 1814				
332 S	HD8890 Polaris	01 22.6	+88 46	20 21	20 00	0614 E	+89 11		
398 S	"	"	"	21 05	21 5433	0520 E	"		
464 C	Comp			21 5731				Th Ar echelle	120sec
530 C	Comp Repeat			22 0706	220906			"	120sec
S	HD 3712	00 39.9 1989.5	+56 29	22 1256	22 5308	E			
C	Comp (1st try did not picket fence)			2306				Th Ar echelle	120sec
S	Flat (Spect Controller source)			23 0935				Tung Clear	30sec
D	DARK			23 1233					1800sec
D	Long DARK	3 hrs		00 30	All lights off before start				

Spectr. Temp. ..... Dome Temp./Hum. 46.7 / 62.7 Transparency Conditions Part cloudy 100

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. + ... 193.6

Slit Length = 650μ

Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					(1st) A 27°30'	52μ	Kodak				
	Generator turned "off" after start; turned back on after restart.									Not kept	2958 picket
										OK	18
21	poor	2	F	Echelette	600 [illegible]	50μ	5500Å	1877 Ref	Asym Sp. AK	F=-2567 OK	AM2
63	soso	2	F				Readout Rejected OK		1st Readout on 2nd.	F=-2567 some cloud	841
92							(Readout took a few trials before this result)			half picket fence effect saved and plotted	
85										F=-2559 OK ~~not Ejected fence odd.~~	
31	poor soso	2.5	krotiab						sk/vel	F=-2555 3999 cnts 360 cnts	
										F=-2550	3910
52											1066
										F=-2552 OK	25

101 Thurs Fri Echelle Ref with 200a fiber feed

Date Sept. 15.-16/86... Observers ...Th..... Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2,681346	Flats during afternoon (Tungsten halide) From Echelle source.								
200C	Th-A hollow cathode (afternoon)								
266D	Dark (1 hr) during afternoon - written @ ≈ 18 30								
332C	Comp			18 54 27	18 56 23	while on α Boo		Th Ar Echelle	120
398S	Flat	Spect Controler		18 58 46	18 59 42			Tung A=1/2	30sec
464S	HD 124897 α Boo	14 15.2	1989.5 +19 15	19 03 34	19 16 10	04 27 W			
530S	Flat	Spect Controler		19 18 26	19 19 20			Tung Clear	60 sec
596S	HD 137909 B CorBor	15 27.3	1986 +29 09	19 30 12	20 23 22	04 23 W			
662C	Long Comp							Th Ar Echelle	300sec
728S	HD 8890	01 22.6	1900 +88 46	20 43 38	21 17 11	E			
794S	"	"	"	21 20 29	22 13 18	E	+89 09		
860S	"	"	"	22 17 36	22 47 35	04 20 E			
926S	Flat				23 52				20 sec
992S	"			22 53	23 54				30sec
1058C	Long Comp			23 55					300
D	Long Dark	after topping up		≈ 23 25	-10,800 secs				"

Spectr. Temp. ..... Dome Temp./Hum. 57F / 62% Transparency Conditions thin cloud coming 102

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 150F / 86% (Slit H = 650μ) Humidity was Max = 50%

During Relevant Exp

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Int PCS cnts A/B	Quality
				Exhibit Ref	600, 4330	90μ	5500 Å					
												49
					600, 4330	50μ	5500Å	187 Ref				3680
69												487
75	?	0	K2III						(std vel + std spectrum)		30/45	1078 Red hump
197									(Exp meter balanced)		0/0	1923
10*	seeing OK	4	F0p		(Thought it would have been sit??)				Hsm Sp. HK	T = 2.600	48/77	145 Red hump
									noise at Red end too →			
M6											92/49	9190
13	seeing poor	2	F		Wk but OK →				Hsm Sp. HK	T = 2684	90/94	254
40	poor	"	"		Looks OK →				"	T = 2.703	107/163	607
20	poor-Fair	"	"	Dec guided "Manually" ie no electrics						RA manual too	0/1	292
											0/0	338
43											0 r 0	484
180										while closing	33/48	9179

103

Echelle positional stability tests

Date Sept. 19/20/21 (Mon/Tues) ..... Observers ..... Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
332	Comp before Toppup			18 35	18 57			Th-Ar Echelle	120sec
398	Comp while ~~took~~ toppup thawing			19 0223				"	120
464	Comp after nossel removed			1908				"	120
530	Comp Later on			1918				"	120
596	" "	"		2216				"	120
	Comp just before toppup			00 3021				"	120
	Comp just after toppup ~~during~~			004025		(during thaw up		of hose Th Ar	120
	Comp just after removing nosse (from dewar			00 4529					120
	Long Dark [nothing touched]			004824					7200
Continuation Sept 20/21 Same tests but with cold box fan running									
332D	Long Dark 1h. during afternoon								1hr
398	Comp before toppup			18 40	18 42			Th Ar Echelle	120sec
464	Comp after toppup (waiting for thaw)			18 51				"	120sec
530	" " "			18 58				"	120sec
596	Comp Later			1 9 37 35				"	120
662	" "			20 26					120

Spectr. Temp. ..... Dome Temp./Hum. ..... 100°F outside Transparency Conditions ... foggy, night 104

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Warm Rm Humidity = 72% ~~of course~~ - Raining

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										T=-1.979	4097
Topped up very smoothly toward Vibration of Echelle for these tests.										T=-2.143 → -2.226	4040
										T=-2.269 → -2.279	4058
(Note I always did "4 Bs" ie start pulses before each integrate)										T=-2.279	
										T=-2334	
										T=-2370	4099
										T=-2.423 → -2434	4143
										T=-2.430 → -2.421	4032
Warm Rm Humidity = 52%											
											40
										T=-2553	4201
~~42~~										T=-2.800 → 2.978	4173
40										T=-3.098 → 3.219	4146
40										T=-3.501 → 3.530	4311
46										T=-3.769 → 3.772	4333

105 Continuation of Positional Stability Tests of Echelle Ret,

Date Sept. 20/21/88 Observers ...J.H..... Tues-Wed

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
7280	Long Dark	1 hour		20 45 38					
794	Comp			21 47 46				TH4 Echelle	120
860	Comp - Repeat of previous			21 51 50					120
926				922					120
	Dark	1 hr		22 28 36					
	Comp before topup			23 31 14					120
	Comp while tube thawing			23 43 12					120
	Comp after topup			23 57					120
	Comp			00 11					120
	Long Dark	9 hrs		00 15					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Nothing touched in instr Rm (Lights out in dome)									T= -3.881 → -3.873 → -3.874	57
81	← note Xpos cnts (unpointing)				Picket fence (kept)					T= -3.873 → -3.874	4804
	Note - I was printing something from MKIII upon Readout & during integ										
56, 53 cnts on next test (printing out during Readout), 4 of last exposure here.										T= -3.876	4199
55										T= -3.838	
										T= -3.905 (end	48
55										T -3.905 → -3.903	4281
42										T= -3944 -3.947	4435
45										T= -3.927 → -3.904	4368
42										T= -3.651 → 3.620	4414
										T= -3.	

107 Echelle Set Tests, Positional Stability near wavelength Region

Date . Sept. 21-22/88 (Wed-Thurs) Observers . T.M. λ 5390 Å

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
? DARK 2660	(Afternoon Integration)								
	Comp before top up			18 45 15				THAr Echelle	240
	Comp while pipe thaws			19 03				"	240
	" after pipe removed			19 09				"	240
	Dark (nothing touched)			19 22	20 22	Picket fence stuff		—	
	Comp			20 24					240
	Dark (nothing touched, but desk lamp on)			20 35					1800
	Comp			21 31 35					240
	Comp			22 02 31					240
	Comp			22 30					240
	Comp			23 40					240
	Comp			00 20 55	00 25				240
	Comp	~~before~~ Top up		01 28		Not kept.			240
	Comp	after partial top up.		01 48					240

Spectr. Temp. ..... Dome Temp./Hum. 60F / 87% Transparency Conditions ..... Cloudy .....

Focus ..... Work Room Humidity = 48%

Spectr. Temp. ..... Dome Temp./Hum. .....

Echelle Temp T = -3.253 when coming in @ 18:30 EST

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				echelle	600, 4440 X-DL	50μ	5390 I9			Hump: Red end	36
105										-3.258	1671
130										-3.507 → -3.638	1667
113										-3.649 → -3.585	1646
4		(2/3 accumulated RS equivalent)							(Dump 6 trips before red)	-3.553 → -3.300	60
123										-3.280 -3.276	1734
0		(3/2 accumulated)							(HV overload event ??)	-3.274	40
0		(1/2 accumulated)					(Reset sum)			-3.246 -3.250	1700
.										-3.237 → -3.237	1773
152										-3.239 -3.234	1786
100										-3.249 → -3.248	1754
107										-3.257 → -3.256	1784
120		(I walked in to start top up of red light on before finish)								-3.312 → -3.536	Pocket
277				I guess it's warming up fast →						-5.440 → -5.550	1774

109 Thurs-Fri Make Pos Stab tests

Emulsion Batches:

Date Sept. 22/23.'88 Observers Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	Prob nothing -								
68 D	DARK			17 2522					
134 S	FLAT (Spect Centr)			1755	1758			TUNG H=1/2	≈30sec
200 C	Comp (before top up)			1759				Echelle	240
~~200~~	Restart with Echelle, Rather than Echellex.							Th A Echelle	
266 C	Comp (before top up)								240
332 C	Comp (during hose thawing)			183422					240
398 C	" (after hose removed)			1840					240
464 D	Dark			1846					1800
530 C	Comp			191726					240
596 D	Dark (dest lamp off)			1927					1800
662 C	Comp			21 07					240
728 C	Comp (Fan turned off before)			21 1253					240
794 C	Comp			2137					240
860 D	Dark			2146					1800

Spectr. Temp. ..... Dome Temp./Hum. 63F / 89% outside dome (H=53% in Rm) Transparency Conditions ... Cloudy again ... 110

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Echelle Tilt = 1.84 → H = 650

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. X (grating)	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								Cold box fan on for 1st part of			
								night. will indicate where I turn it off.			
				-							
67				.4	600, 5390	56u	5390	1.827 Rot			675
117										T = -1.284	1334
										T = -1.280 -1.275	1793
										T = -1.642 → -1.636	1411
										T = -1.628 → -1.588	
						(Looks noisy?)				T = -1.577 T = -1.384	49
										T = -1.382 → T = -1.358	
										T = -1.342	
										T = -1.256 → -1.257	1410
138										-1.259 → -1.262	1371
										-1.266 → -1.263	1572
										-1.262 - -1.261	24

III #2 Cont

Date 9.22.23 Observers TH

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
926C	Comp			22 20				TH A	240
942C	"			22 36					240
1058D	Dark			22 43					1200
1124C	Comp			23 10					240
1140C	Comp (before top up)			23 24 43					240
Not Kept C	Comp (during pipe thaw)			23 36 17					240
1256C	Comp (after top up)			23 42 28					240
D	Long Dark			23 50					7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 112

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										T=-1261	1467
										T=-1256 - -1.253	1488
										T=-1.253	20
										T= -1.252	1471
										T=-1.253 -1.251	1379
										T=-1.454 - 1.780	picket fence
										T=-1.806 -1.972	1391
										T=-2.089	

113

Fri – Sat

Echelle Ret Obs (200u fiber feed)

Emulsion Batches: .....

Date Sept. 23/24/88.. Observers ..K.K.-T.n..... .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2									
68									
134C	Comp from	Echelle		183852				Th-A	240
200S	Comp (from	Sp (controller)		1851				FeNe Clear	120
266S	B CONBOR HD137909	15 27.3 1986	+29 09	185822	20 00 7	W			
332S	Comp (							FeNe Clear	120
S	HD 8890	01 22.6 1900	+88 46	2016	2059	E			
S	Comp			2101	2103				120
W S	HD 8890	01 22.6	+88 46	2105	2205	0437E			
S	Comp			2206				FeNe Clear	120
S	HD 3712	00 40.0 1989	+56 29	2211	2251	0157E			
	Comp							FeNe Clear	120
FM0001.6TN	HD3712	Seeing test		(Fiber head view)		0150E	+56 29		
S	Flat (Spect Cont) ×4			2307				Tung Clear	10sec
FM0001.7TN	MARS			2325					
	DARK ×2			2349	(0024 start #2)				1800

Spectr. Temp. ..... Dome Temp./Hum. 63F/60% Transparency Conditions ..Clear..... 114

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 54F/90% Echelle 1.84

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. & Grating	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				.4990	600, 5390	50μ	5390Å				
										T=-3.34	
										T=-3.409 (Typ up before)	
	poor	4	FOG	FM006106.TN	Frame 1 XFWHM 2.819376 YFWHM 3.057774				Asm Sp KK	T=-3.46 (Red hump)	189
					2 2.986989 3.092360					J=-3.326	
					3 3.765701 2.651231						
	poor	2	F		4 3.321582 3.570265				Asm Sp KK		319
		2	F						Asm Sp KK	T=-3.316	402
	poor	2.5	KO							T=-3.302	
										J=-3.308	
31×31 (diffuser in)	(Note)	Box	was	dbld's	result	from	frames		looked like	partial oversaturation. T=-3.300	
										T=-3.303	38/70 ~~384~~

Mon-Tues

More Ref Pos Stability tests.

Date Sept 26-27/86 Observers JN

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	Null Flat from Echelle								
	Flats (spect/Contr) x4			19 29					10 sec
	Comp (echelle source) (before top up)			19 34 20			Echelle #	TH A	240
	DARK			19 41 23		Cap put in place Fiber feed			1200
	Comp (echelle source) (just before top up)			20 03 41					240
	Comp (white pipe thaws)			20 12 40					240
	Comp after Top up completed			20 18 05					240
	DARK			2025					1800
	Comp			21 13					240
	"			21 37 26					240
	DARK			21 40					1800
	Comp			22 35					240
	Comp			23 21					240
	Comp (before top up)			23 56					240
	" after top up			00 15					240

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions Cloudy - Rainy 116

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... H in warm Room = 50%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. X Grating	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				1.84	600, 5340	650H 5u	5340Å	1 1/2 Red			
10	70 each			.4440						# 53 each	
2									T=-2.430		1721
3									T=-2432		27
4									T=-2.449		1828
5									T=-2518	T=-2577	1591
6									T=-2.580		1600
7									T=-2544	T=-2.296	63
8									T -2283	T=-2.269	1660
9									T=-2.231	T=-2.223	1614
10									T=-2.223	T=-2.206	32
11									T=-21.208		1591
12									T=-2209	T=-2211	1698
13									T=-2213	-2.213	1627
14									T=-2.300	-2.293	1652

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Wed-Thurs

Date Sept. 28-29/86 Observers ... J.M.

Emulsion Batches:
.....
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	Echelle Flat (Dummy)								
(66,134,200 266)S	Flats x4	[Spect Contr source		18 17	18 26			Tung Clear	10sec
332C	Comp (while top up pipe flows)			18 28				Th Ar Echelle	240
398S	#0137909	15 27.3	1986 +2909	18 40 15	2002	0450 W	+2909		
464C	Comp			20 04 32					240
530S	Vega	18 36.5	1989 +38 46	20 19 29	20 57	02 30 W			
596C	Comp			20 54 40					240
662S	Comp FeNe [Spect Controller]			21 03				FeNe Clear	240
	Pol HD8890	01 22.6	+88 46	21 15 14	22 13 09	0405 E			
	Comp FeNe [spect contr]		Diffuser IN	22 17					120
	Comp Th Ar [echelle]			22 24					240
	" "	"		22 35		No Noise seen on PCS		Expander	240
	" " Repeat of Previous			22 42					240
	DARK			23 06					1800
	LONG DARK after top up			23 52					3600

Spectr. Temp. ..... Dome Temp./Hum. 53°F / 70% Transparency Conditions . Clear 118

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 44°F / 95% * CCD image poor again (partial saturation effect)

Warm Room H = 45%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. x Grating	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				1.84	600, 5390	650 H Sci 4	5390Å	Rot 1872		~~Diffu~~	
358 par									Diffuser IN	298, 313, 309, 213	
Exposure Interrupted	*										1666
	5050	4	FCp	(PCS counter ≈ 150 cts/channel)					Asm Sp-Htr	T=-2.627 1/2 Pickoff leave	
											1765
132		0	AOI4						Obs Prgm	T=-2987 OK	923
										T=-2989	1636
				Diffuser IN [Should have been OUT]						T=-2991	765
65		2	F						Asm-Sp-Htr	T=-2997 (Real bump)	206
										T=-2998	2172
24					(while closing)					T=-2.494	1616
290	(Very ODD one)?				(after Gen off and closed)					T=-2.495 ODD	6077
307										T=-2.498 OK	1748
	Odd like the other one.									T=-2.497	1983

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Thurs - Fri

Echelle Ref with 200u Fiber.

Emulsion Batches: .....

Date Sept 29-30 /88 Observers Th .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	Tungsten Halide [echelle source]								
68C	Comp							Th A. Echelle	
S	Flats (4)	Spect controller		18 17	18 25			Tung	~30sec
398 S	Comp (Spect Controller)			18 35		After top up			240
464 S	Vega	18 36 5 1988	+38 46	18 44	19 10	0053W	+		
~~S~~	~~Comp (Spect Contr)~~			19 11				FeNe clear	~~FeN~~ 240
530 S	Repeat			19 17	19 27			"	"
596 S	HD 8890	01 22.6 1900	+88 46	19 27	20 53	0523 E	+89 11		
~~S~~	~~Comp~~ (dummy setup)			20 54	20 59	(Causes too much noise)			240
662 S	Comp Repeat			20 59				FeNe	240
S	HD 3712	00 40 1988	+56 30	21 06	22 06	0220E			
S	Comp			22 08	22 18				~~240~~
S	Flats x2 (Spect Contr)			22 20	22 22			Tung	30 sec
C	Comp (Echelle)							Th-A	240
D	DARK (Long) 2hrs. Dark Slide closed								~~3600~~

Spectr. Temp. ..... Dome Temp./Hum. 55F/80% Transparency Conditions ... thin clouds 4 AM 120

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 58F/95% Warm Room H=46%

Echelle Tilt = 1.34

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst. x tilt	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				.4440	600, 5390	650H 52u	5390Å	1872 Ref			
											2324
700 est										DIFFUSER IN 380, 474, 468, 342	
0										Diffuser IN	716
36	OK	0	AOSp								919
0										1/2 picket fence,	-
0											803
0	SOSO	2	F	(40-60 counts on PCS during exp) noise info					Asm Sp-kk	getting cloudier (Red bump)	504
0									Same OOO	(not picket fence) report of last night	
											774
0	OK	2.5	KO						stdtel	Cloud OK	318
										-2.751	748
140										891, 692	
										T=-2.751	1840
(1st 1/2 hr dark did a picket fence)											

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Fri-Sat

Date . Sept. 30/Oct 1/86 Observers . T.n.-hk

Emulsion Batches: .....

PRIMARY Very fogged up. Dome inside very wet & cool

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	First Flat Tung ~~Hollde~~	[Spect Control Source]						Tung Clear	15
58,134,200S	Flats x 3	[Spect Contr		18 23				"	15 per
266S	Comp	" "		18 45	18 40 Read			FeNe Clear	240
332S	Comp	" "		18 51	18 52			"	40
not Kept.	Comp Echelle source			18 53 30					240
398C	Comp Echelle source								240
464D	DARK			19 26					1800
530S	Comp			21 03				Th-A	240
596S	Comp Spect Contr							FeNe	40
	HD 8890	01 27.6 1900	+88 46	21 29 18	22 33 41	03 38 E	+ n.		
FM00108	Polaris B	Seeing test		22 22			(8) Frames		
	Comp							FeNe Clear	40
3x	Flat	[Spect Contr] x3		22 35				Tung A=1/2	15
	Comp							nA	240

	FM00108.TN Frame	XFWHM	YFWHM
	1	2".814914	1".448632
	2	2".451812	2".161431
	3	2".431402	1".556345
	4	2".387734	1".548654
	5	2".390406	1".565746
	6	2".579363	1".796458
	7	2".627827	1".712170

Spectr. Temp. ..... Dome Temp./Hum. +62°F/80% Transparency Conditions Hazy.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +65°F 100% Echelle Tilt = 1.84 X Tilt = 0.4440 ~~Diffuser IN for Specific~~ Controls

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle Ref	600, 5390	650H 50W	5390Å	1972 Ref			1378
≈200 per	Note - Diffuser IN for Flats, OUT for FeNe comps.									1269, 895, 1254	
0				Diffuser ~~IN~~ for this one though							1978
9				Diffuser OUT							9677
	(I + was unplugged at echelle)									T = -2526 noisy	45
										T = -2 400 OK [Ref lamp]	35
										T = -2.433	
										T = -2.421	
										T - 2427	2103
0	OK	2	F	Echelle Ref	600, 5390	H=650 W=50	PCS lines 15/29		Asm Sp KK	T = -2.429 OK	650
23×23	Int×6				(5 Random + 3 selected in this order)						
Diffuser OUT										T - 2442	1757
Diffuser IN.										600, 547, 597	~~600~~

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PCS again, after long absence

Emulsion Batches: .....

Date Oct 3-4/85 (Mon Tues) Observers Tues/Mtl-Tu PS2 Time 2 min 50 secs behind Astro Clock

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T. PS2 fine	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1284	FLAT - During Day						ND in	Tung	
1285	Fe-Ar				1844		ND out	Fe Ar Clear	40+160
not written	HD 171232	18 32.2 (1986)	+25 29	1852	1922	0124 W	+2526		1800
1286	"	"	"	1926	2003	0205 W	"		1800
~~1287~~			(Cont. Exp 1852 → 2003)						
1287	Fe-Ar Comp			201328				Fe A Clear	200
1288	BM CASS	00 53 9 (1986)	+64 01	202244	2123	E	+6358		3600
1289	Fe-Ar Comp			212642				Fe Ar Clear	200
1290	BM Cass [Cont of 1st exp of 1288]			213637	2237	0139 E			3600
1291	Fe-Ar Comp							Fe A Clear	600
1292	Cloudy Sky - TORONTO			2253		≈0 40E	−20°		1200
1293	Fe Ar							Fe A Clear	200
1294	HD 8979	01 25.9 (1989)	−0027	2331	2348	0059 E	−00 26	Halted	1800
1295	Fe A Comp			2354				Fe A Clear	200
1296 IN	Flat ~~on turret~~			00 08 01		ND in gun barrel. Density 2.3 unlabelled		Tung A1/4	3600

Spectr. Temp. ..... Dome Temp./Hum. 48° / 60% Transparency Conditions Some clouds in South

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 46° / 90% Note, For comps and Twy Flats, Diffuser was in.

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				300 fiber Red PCS	1800/63°	BS	Hα	IB			
							Hα	IB			
TOPS 180/8	SOSO	V 7.73	G8III	300 fiber PCS			Hα	IA	stdvel	PFR Temp = 36.5 MA Chiller 6 - 0.1°C FIELD 4	
100 counts typical) Added to previous. Previous obs not written 1800 x 1804/620 secs											
(Dark (shutter closed) = 5 counts/channel)										N	
180/8	SOSO	9	Em				Hα	IB			
10/8	SOSO	9	Em	300 fiber Red PCS	1800/63°	BS	Hα	IA	Obs pgm	written	
170/12				"	"	"	"	IB		Some cloud	
70/7 [Better focus now]				"	"	"	"	IA	Obs pgm	[added to 1st exp]	
160/11				"	"	"	"	IB			
10 counts 70 counts 1 counts	Dark (shutter closed) gives ≤ 10 counts per pixel							IB			
300/9	POOR	V 6.41	gK0	PCS	1800/63°	BS	Hα	IA	stdvel	Halted by cloud	
170/10								IB			
3300								IA			

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Tues-Wed

Date Oct. 4/5. 1988. Observers Tn.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1303	Flat			15 10 36	16 10 38				
1304	Comp for maps			19 15			ND 4	FeNe Clear	200
not written	" ~~6328~~			19 22			"	"	200
1305	" 5140 Å			19 ~~53~~			no ND	FeNe A-1/4	200
1306	" ~~5092~~ Å			20 02			no ND	FeNe A-1/4	200
1307	" 5643 Å			20 09			"	"	200
1308	" 5892.514			20 16			ND	FeNe Clear	400
1309	" 6139.893			20 27			ND	FeNe Clear	200
not written	" 6628.963			20 35			ND	FeNe Clear	200
1310	5392.45 Å			20 44			no ND	FeA ~~Clear~~	200
	Attempt to Relo 1200/46 stepping from 43°->48° bombed Fiber Control pgm								
1311								FeNe	100
1312								FeNe	100
1313	Sky								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Tilt Set WARM Rm H = 43%

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							λ From tilt control				
				PCS (200 u fiber)	1200/48°	BS	6628.863 Hα	480		Chiller Temp = -00.9 °C	
770/17					1200/45°		6385.8 ?	470	IA	written	
400/15					1200/47.5°		6507.43	475	IB	not written	
260/11					1200/42°		5139.916	420	IB	written	
540/24					1200/43°		5392.45	430	IB	written	
400/40					1200/44°		5643.313	440	IB	written	
180/10					1200/45°		5892.514	450	IB	written	
400/12					1200/46°		6139.873	460	IB	written	
120/14					1200/48°		6628.863	480	IB	not written (done by AK)	
220/12	*H = 1/2				1200/43°		5392.45	420	IA	written	
many error										plotted but not written	
					1200/49		6871				
					1200/47.9		6605				
					1200/47.9						

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Wed- Thurs

Date Oct 5-6/88 Observers T.T.

Emulsion Batches:

Diffuser IN for All

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
14	FLAT	during Day		15 22 21	16 22 21		ND in	Tung H=1/8	3600
15	Comp 6500			18 29 28			ND out	FeA clear	600
~~16~~	Comp 5013			~~18 59 47~~			"	"	600
17	Comp 5140			19 21			"	"	600
~~18~~	Comp 5392Å			19 32			ND out	FeA H=1/2	600
19	Comp @ 5643Å			19 46 30			"	"	"
~~20~~	Comp 5892 Å	not written		19 58			"	FeA Clear	"
not ~~120~~ then	6140 Å	written		20 10			"	"	"
21	6385Å			20 23			"	"	"
22	6629Å			20 34			"	"	"
1323	6750Å			20 45			"	"	"

Note - Sept 89 Comp 5892Å not written, but header info was written mistakenly into Comp 6140Å Record.

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Cloudy 128

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Chiller T= -0100°C

Buffer

Exp. Mtr. A/B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion Å	P.H.	Program Grating Angle Å	Remarks	Quality
				~~Quartz~~ Fiber PCS	1200/48.2	BS	6500Å	IA	Cont 6677.43	Set 482 written	
400/77				"	"	"	"	IA	"	~~Set~~ written	
600/18				"	1200/~~45~~	"	5003Å	II		~~written~~	
640/20			8	"	1200/420	"	5140Å	IB	5139.916	written	
330/15			10		1200/430	"	5392	II	5392.45	written	
200/10			17		1200/440	"	5643	IB	5643.343	written Chiller T= -01.0°C	
300/15			~~14~~		1200/450	"		II	5872.514	~~written~~	
500/10			14		1200/460			IB	6134.893	~~written~~ written	
400/15			06		1200/470			IA	6385.9 Sp 3	written	
400/40			15		1200/480			IB	6628.963	written	
520/80					1200/485			IA	6749.992	written	

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Thurs/Fri

Note PS2's Sheet Time behind Astro by exactly 3 min

Emulsion Batches: .....

Date Oct 6/7/88 Observers TN .... Diffuser in too

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T. PS2 Times	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1324	FLAT			18 23	19 23		ND in	Tung A=1/8	3600
1325	FeNe Comp (Long)	19845		19 48 15			ND in	FeNe Clear	600
1326	HD 171232	18 32 12	+25 29	20 06 29	20 36 32	02 58W	+25 26		1800
1327	FeNe Comp (Long) while clearing sky			20 38	20 48		ND in	FeNe Clear	600
1328	FLAT #2			21 00			ND in	Tung A=1/8	3600
	I may have written HD171232 twice, just to make sure.						Yes I did - deleted		
1330 TN	Long Dark	shutter closed		00 12 12					7200
1331 TN	Flat (during afternoon)			Oct 7/88. written @ 6 PM		No Observing, Thunderstorms			

Spectr. Temp. .... Dome Temp./Hum. ~~++5°F~~/80% Transparency Conditions . Part cloudy – Cloudy ... /130

Focus ....

Spectr. Temp. .... Dome Temp./Hum. ....

Warm Rm H: 40%

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion λ	P.H.	Program	Remarks	Quality
? 200				200u fiber PCS	1200/48.2°	BS	6600Å	IB		Chiller T = -01.0°C	
360 10								IB			
500 10	ok	V = 7.73	G8III					IA	Std Vel	Some cloud, (plot done)	
380 12								IB		(plot done)	
2000 50								IB			
8/1								IB			

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Wed - Thurs

PCS with 300u Fiber

Emulsion Batches: .....

Date . Oct. 12/13/88 ... Observers ... T.q. .....

Reset PS2 times & Date

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1333	Flat by KK	before Sundown							
1334	BD +27 4649 HD222085	23 49.9	+28 06	22 20	22 50	0007 W	+2831		1800
1335	"	"	"	22 5430	23 2436	W	"		1800
1336	FeNe Comp			2326					420
SP001337.TN	FLAT at END			2339	0039				3600
1338	Flat in ch B for test								
1339	FeNe Comp								
1340	Sky spectrum							Full ND	1200
1341	FeA Comp (preferred)							Full none	120
1342	Simulator output								
1343	Flat			15:52	16 52			V8 ND	3600

Spectr. Temp. ..... Dome Temp./Hum. +33°F / 92% Transparency Conditions Some clouds 132

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +31°F / 98%

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								1B		written	
900 25	poor	V. 7375	10e	BCS	1200/1082	BS	6600A	1A	Rci	written some cloud [cuts as high as 550]	
450 25	"	"	"	"	"	"	"	1A*	*Continuation	1st exp II Peg	
350 84				"	"	"	"	1B			
1780 70				"	"	"	"	1A		written	
								B			
								A			
1400			G2V					A			
								A			
								A		written	

133 Thurs - Fri

Emulsion Batches: .....

Date ..Oct. 13/14..... Observers ..TM..... .....

PS2 Time check with Astr Clock.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1900 1343.TN	~~Fe-A~~ Flat -	Previous	Page						
1344	Fe-A			1807	·		No ND	Fe-A clear	120
1345	HD171232	18 322 1989.5	+25 29	18 1822	·	0130 W	+		1800
1346	Fe-A							Fe-A clear	120
1347	HD 173740 B	18 424 1988.6	+59 369	18 57	1957	W	+5931		360
1348	Fe-A						No ND	Fe-A clear	120
1349	HD 173740 A	18 424	+59 369	20 0222	Resumed 20~~44~~35	0305W	+5932		180
1350	Fe-A				20 39			Fe-A clear	200
1351	HD 224085	23 499 1900	+28 06	~~21~~ 26	21 56	0 44 ~~E~~	+2829		1800
1352	Fe-A								~~1200~~ 120
1353	HD 6314	01 04.6 2000	+39 59	2203	2223	0126E			1200
1354	~~Fe-A~~				22 2732				
1355	Flat at end				22 3033		NP in	Jump A-1/8	3600
Tried to Place Fiber Feed Cap in place; Where is it?									

Spectr. Temp. ..... Dome Temp./Hum 37°F / 60% Transparency Conditions Sun & clear - Cloudy 134

Focus .....

Spectr. Temp. ..... Dome Temp./Hum 32°F / 85%

Exp. Mtr. A	B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
470	85				PCS		65		IA		written	
300	20	OK	V= 7.73	G800					IA	std vel	cnts as high as 1000	230
470	88								IB			
180	10	Fine	V= 9.69	J005	[South end Faint 1/5 star of pair]				IA	kki pgm	[cnts as high as 350 Faint end of pair]	150
500	75								IB			
300	5	ok	V= 8.90	J004	(North is brighter of pair)				IB	kki pgm	cloud Holden 2014	90
									IA		Cloud for awhile	
550	16	ok	V= 7.2 → 7.5	K2e					IA	kci pgm	as high as 750 cnts	250
~~750~~									IB			
750	20	ok	V= 6.57	K2n	(as high @ 1000 cnts)				IA	Telluric?	Cloud (thin)	250
									IB			
950	60								IA		Chilka T still -01.0°C	
											RFR T reads 375uA	
							Does this Flat look odd?:					

135

Fri - Sat

Date Oct 14/15/88 Observers J.n./MF+mki ↙FORD

Emulsion Batches: .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1356	1st Flat								
1357	1st Long Fe-A		1989.5				No ND	Fe A Clear	308
SP [1358 mki]	HD 171232	18 32.2	+25 29	18 50 56	19 11	0(58W			1200
	Fe-A			19 29 20					300
	Fe-A			20 13 14					300
	HD 212280	22 22	1989 +30 18	20 32 34	21 03				180
1362	mki n #2			21 07 36	21 37	00 35E		+	1800
1363	Fe-A						No ND	Fe A Clear	300
64	HD 224085	23 49.9	1900 +28 06	21 48 21					1800
SP 1366	~~HD 213389~~	~~22 29.7~~	1989 ~~+49 18~~	~~22 27~~	Fe-A				120
1367	HD 213389	22 29.7	+49 18	22 35					1200
[1368 mki]	Fe-A		1989						120
1369	BM Cass	00 53 9	+64 01	23 03					1800
1370	Fe-A			23 35					300
1371	BM Cass	n	n	03 43					1800

Spectr. Temp. ..... Dome Temp./Hum. 49°F/60% Transparency Conditions Slhazy 130

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. /

Large Class Tours Looked at MARS with CCD Pg. John Lester, Rg.

Exp. Mtr A	Exp. Mtr B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					PCS ~~1200/4882~~	1200/4882	BS					
300	20	Fine	V= 7.73	G8III		1200/4882		6600Å	IA	stdVel	as high as 1100 counts	
500	90					"		"	"	"		
500	95					"		"	IA	Note SR & GR written incorrectly		
500	10	Fine	V= 7.5	F7 G5IV		"		"	IH	MKi pgm	some cloud	
400	15	"	"	"		"		"	IA	continuation of 1st exp	more cloud	
510	80					"		"	IB			
300	16	OK	V= 7.5	K2e		"		"	IB	Rci pgm	cloudy thinly	
									IH		Empty one written 1st Then deleted	
1900	40	Fine	V= 6.4	K2III					~~IA~~	MKi		
									IB			
250	8	OK	~~2~~ 9	~~B~~ F					JA	Obs pgm	some thin cloud	
500	90								JB			
									IH			

137 #2

Date Fri.-Sat. Cont. Observers ...../mkt..Tn..t..MF

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP001372.mk1	Fe-A after BM Cass							No ND	Fe-A Clear
1373	HD 216489	22 52.5 1988	+16 47	00 21		W			1200
1374	Fe-A								300
75	HD 218153	23 04.9 1988	+25 57	00 49		W			1800
76	Fe-A								300
77*	HD 221085 II Peg	23 53.9 1988	+28 29	01 26		W			1800
78	Fe-A								300
79	HD 223460	23 49.1 1989	+36 22	02 05					1200
80	Fe-A								300
81	HD ?	02 25.0 1989	+29 09	02 39	02 52	01 48 W	+29 09		(800)
82	Fe-A								120
83	HD 12929	02 24.8 1989	+29 50	03 03			+29		1800
84	Fe-A								
85	HD 32963	05 07.2 1989	+26 19	03 42	04 12				1800
1386	Fe-A			04 13					300

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2000 25	V fine	V= 5.6	K1 S	RCS	1200/482	BS	6600Å	IA	Mk1 pgm		
								IB			
600 15	fine	V= 7.6	G8 III					IA	Mk1 pgm	as high as 800 cnts	
								IB			
300 22	fine	V= 7.2- 7.5	K2e	*[for sp: to change title from Fe-A]				IA	Rc; pgm	as high as 950 cnts	
								IB			
3300 88	V fine	V 5.9	G2 III e					IA	Mk1 pgm	as high as 3700 cnts	
								IB			
2000 40	Fine							IA			
								IB			
1600 40	V fine	V 7.67	K3 III					IA	std vel		
								IB			
800 20	V fine	V= 7.72	G2 V					IA	std vel		
								IB			

139 #3

Date Sat. Oct. 15 Observers .....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1387	HD65583 ??	m. 1988 07496	+2915	0435	0505	E	+2911		1800
1388	Last Fe-A						No ND	Fe-A Clear	
1389	Last Long Flute end		On timer	0533					10,800
	~~Fe-A HD 224085 Fe-A~~								~~30~~
	~~HD 224085~~	~~23539~~ 1988	~~+2829~~	~~21 12~~					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... 1937 getting cloudy

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
900 30	Fine	1.00	G8II	PCS	D00480	BS	6600A	IA	Shelve	some cloud	
550 80								IB			
2,200 65								IH			
~~550 90~~								~~IB~~			
								~~IH~~	~~Acc prog~~		

141

Tues-Wed KK Class four earlier

Emulsion Batches: .....

Date Oct 18/19/88 Observers T.m .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1390	Flat				0323				
1391	Fe-A First		1988.5	20 25 27	20 30 28	~~02 50E~~	no ND	Fe A Clear	300
1392	HD 8779	01 25 9	+-0028	20 32		0250 E	-0029		1800
1393	Fe-A		1988	~~21 11 38~~				Fe A Clear	300
94	HD 224085 II Peg	23 53 9	+2829	21 11 38	21 41 44	0039 E	+2832		1800
95	Fe-A		1988						300
96	HD 224085 #2	23 53 9	+28 29	21 49 13	22 19	00 01 E	+28 32		1800
97	Fe-A		1989					Fe-A Clear	300
98	HD 217188	22 ~~58~~ 3	-00 23	22 27	22 57 16	0123 W	-0026		1800
1399 mki	Fe-A		1988 5				no ND	Fe A Clear	300
1400	HD 8779	01 25 9	-0028	23 05 26		W	-0029		1800
1401	Fe-A Last			(23 45)			no ND	Fe A Clear	300
1402	Long Flat at end (on time) 3 hrs						ND in	Tung A=1/8	~~1800~~ 2800
1403	Dark Next afternoon								3600

Spectr. Temp. ..... Dome Temp./Hum. +43°/90% Transparency Conditions ... ok - cloudy N2

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +38°/96%

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
510	75				PCS	1200/4862	BS	6600Å	IB			
850	22	very poor	V= 6.41	gGO	"	"	"	"	IA	std vel	cnts to 1100	
									IB			
300	10	very poor	V= 7.2-7.5	K2e					IA	Rci pgm	cnts to 550	
500	66								IB			
400	10	poor	V= 7.2-7.5	K2e					IA	Rci pgm	Chillg T = -00.9°C	
500	60								IB	PFR Temp = 36.5 μA on scale		
400	15	poor	V= 7.3	K0III					IA	Mki pgm	Cloudy (partly)	
									IB			
800	30	very poor	V= 6.91	gGO					IA	std vel	cnts to 1150 some clouds	
									IB			
2030	60								IA		WRITTEN	
											written	

143

Wed - Thurs

Date Oct 19/20/88 Observers T.H.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1404	Flat 1st			17 23	18 23 26		ND in	Tung A-7/8	3600
	1st Fe-A			18 27			No ND	Fe-A Clear	600
	Very Dark	no lights, caps in		21 44	22 44	Shutter closed			3600
	Long Dark 3 hrs			23 49					11 800

Spectr. Temp. ..... Dome Temp./Hum. 11 °F / 70 % Transparency Conditions ... Semi. Cloudy ... 1/4

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

PFR Temp = 36.8 μA on scale

Chiller T = -01.0 °C

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion Å	P.H.	Program	Remarks	Quality
1560 60				PCS	1200/46.3°	BS	6600Å	IB	Note: Flat Signal I > 10% higher than other times		
520 75								IA			
C-4 (0-4)								IA		w: Hg	
								IB		written (ch B fades ok)	

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Pg #2

1.65, c.26 8m 680f Emulsion Batches: IIaO-e I.A.7 ..... Sept 16/88

Date Oct. 20-21, 1988 Observers ..Fln.-Tm..... W 1.40, 0.23 * IIaO-e / A.7 ..... Oct 20/88

..... no. diffuser

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50312	HD 203064	21 14.7	+43 31	18 ~~19~~	18 35	~ 1h 00m E	~~no ND~~	FeNe Clear	60 60
50313	"	"	"	18 39	18 56	0h 41m E		"	60 60
50314	"	"	"	19 00	19 19	00 18 E		"	60 40
50315	"	"	"	19 ~~22~~ 24	19 41	00 02 W			60 60
50315T	Spot Calib for 50312-50324			15 min @ 15V		D4 3900	D3 4300	P2 4860	
50316	HD 209975	22 02.1	+61 48	~ 19 50	20 08	0h 14m E		FeNe Clear	60 60
50317	"	"	"	20:12	20 ~~30~~	00 08 W		"	60 60
50318	"	"	"	20:35	20:50	0h 27m W	+6210	"	60 60
50319	HD 203064	21h 14.7m	+43° 31'	20:58	21:13	1h 36m W		"	60 60
50320	"	"	"	21:17	21:~~34~~	1h 57m W		"	60 60
50321	"	"	"	21:39	21 59	2h 24m W	+43 51	"	60 60
50322	HD 24912	3h ~~52~~ 25	+35 30	22:17	22:30	3h 48m E		"	60 60
50323	"	"	"	22:35	22 47	3h 30m E		"	60 60
50324	"	"	"	22:53	23 05	3h 11m E	+3542	"	60 60
50325	"	"	"	23:10	23:20	2h 56m E		"	60 60

Spectr. Temp. 147°F ..... Dome Temp./Hum. 48°F / 58% Transparency Conditions Hazy ... cloudy .....

Focus ..... 392 .....

Spectr. Temp. ..... Dome Temp./Hum. ..... / .....

* next Batch of IIaO got 2-3 hrs vacuum

Exp. Mtr / Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
10,030	v good OK	4.99	08	BC	G=5430 1200/508	BS	IIaO-e	1	Ostar Var	comp Cats 1800-60secs	
9885	"	"	"	"	" / "	"	"	"	"		✓
9900	"	"	"	"	"	"	"	"	"	more cloudy	✓ OK
8733				"	"	"	"	"			OK
							"	"			✓ ✓
7900	V good	5.19	0951b	BC	1200/508	BS	"	1	Ostar var		v/v wk ✓
7822	OK	"	"	"	"	"	"	1	"		"
8354	V good	"	"	"	"	"	"	1	"		sl wk
9576	OK	4.99	08	"	"	"	"	1	Ostar Var	Focus @ 391 T=44°	✓
9091	OK	"	"	"	"	"	"	1	"		
~8800	OK	"	"	"	"	"	"	1	"		sl wk
(1000)	OK	4.04	07	"	"	"	"	1	"		
12703	.	"	"	"	"	"	"	1	"		v faint
11676		"	"	"	"	"	"	1	"	Focus set to 390 T=42°	✓ Fine
12375		"	"	"	"	"	*IIaO-e	1	"	Focus Set to 393 T=42°	✓

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pg #2

Date Oct 20-21/88 Observers Fla-Tm

Emulsion Batches:
* #2 IIa-O Batch (previous page)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50326	HD 203064	$21^h 14.7^m$	+43° 31′	23 32	23 50	$4^h 14^m$ W	+43 52	FeNe	60
								Clear	60
50327	"	"	"	23 54	$0^h 10^m$	$4^h 34^m$ W	"	"	60
									60
50327T	Spot Calib for 50325-50327			15 min @ 15′		Dy D3 D2 3900 4300 4578			
50327F	Focus test					4 40W	Comp posn Stellar posn	FeNe Clear	120 120

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum 37°F / 97%

Exp Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
8738	5050	4.99	08	BC	1200/508	BS	*103aOe	1	Osterbrock Var	Some cloud	
793	"	"	"	"	" / "	"	+IaOae	1	"	Heavy cloud — exp. abandoned.	very weak
							*TiO-e				Var center of #31 Red
3600				BC	1200/508	BS	old TiO	1		T = 42°F Set 393	
KK											
Note 10 strips of TiO left in vacuum. Much more needed as you can see. JH											

149 pg #1 Peu Oct 23 7min @ 68°f 1.62, 0, 25 Emulsion Batches: IIa-O e 1A7 Oct 20 '88

Date 1988 OCT 22/23 Observers B.M. - T.M. 1.64, 0.25 IIa-O e #1A7 Oct 21 88

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50328	HD 203064	$21^h 14^m.7$	$+43° 31'$	22:39	22:54	$3^h 26^m W$	$+43° 55'$	Fe Ne/ Clear	90-90
50329	HD 203064	$21^h 14^m.7$	$+43° 31'$	22:~~59~~ 59	23:14	$3^h 46^m W$		Fe Ne/ Clear	90-90
50330	HD 203064	$21^h 14^m.7$	$+43° 31'$	23:19	23:34	$4^h 06^m W$		Fe Ne/ Clear	90-90
50331	HD 24912	$03^h 52^m.5$	$+35° 30'$	23:45	23 54	0215 E	+35 42	Fe/Ne Clear	90-90
50332	HD 24912	03 52.5	+35 30	00 00	00 09	0200 E		Fe Ne Clear	90-90
50333	HD 24912	03 52.5	+35 30	00 15	00 24	0145 E		Fe Ne Clear	90-90
50333T	Spot Calb for 50328→50337			15min @ 15V		D4 3900	D3 4300	D2 4810	
50334	HD 24912	03 52.5	+35 30	00 30	00 40	0130E	~~+35 55~~	Fe Ne Clear	90-90
50335	HD 24912	03 52.5	+35 30	00 ~~45~~	00 54	0116E		Fe Ne Clear	90-90
50336	HD 24912	03 52.5	+35 30	0059	01 09	01 01 E	+35 42	n	90-90
50337	HD 24912	03 52.5	+35 30	01 14	01 23	0046E		n	90-90
50338	HD 24912	03 52.5	+35 30	01 29	01 41	0029E		n	90-90
50339	HD 24912	03 52.5	+35 30	01 47	0156	0013E		n	90-90
50340	~~HD~~ 24912	03 52.5	+35 30	0202	0210	0001W		n	90-90
50341	HD 24912	03 52.5	+35 30	02 16	02 25	0017W		n	90-90

Spectr. Temp. 42°F Dome Temp./Hum. 39°F/93% Transparency Conditions Clearing Fast 150

Focus 393

Spectr. Temp. Dome Temp./Hum. /

Exp. Mtr. B Gilbert	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7773	poor	4.99	08	BC	1200/50.8	BS	IIa-Oe	1	O Star Var		Stuck
9419		4.99	09	BC	1200/50.8	BS	IIa-Oe	1	O Star Var		Stuck
8428		4.99	08	BC	1200/50.8	BS	IIa-Oe	1	O Star Var	Stuck	Flawed in Dev
12900		4.04	07	BC	1200/50.8	BS	IIa-Oe	1	O Star Var		OK
14140		4.04	07	BC	1200/50.8	BS	IIa-Oe	1	O Star var		
15050	S	4.04	07	"	1200/50.8	BS	IIa-Oe	1	O Star var		
							IIa-Oe				
13950		4.04	07	BC	1200/50.8	BS	IIa-Oe	1	O Star var	Spect Temp = 41°	
14830		4.04	07	BC	1200/50.8	BS	IIa-Oe	1	O-Star var		
15080		4.04	07	BC	1200/50.8	BS	IIa-Oe	1	O-Star var		
14340		4.04	07	BC	1200/50.8	BS	IIa-Oe	1	O-Star Var		
15180		4.04	07	BC	1200/50.8	BS	IIa-Oe*	1	O-Star Var	Note (90sec Fe/Ne → 2550 cnts)	
15750		4.04	07	BC	1200/50.8	BS	IIa-Oe*	1	O Star Var		
15980		4.04	07	"	"	"	IIa-Oe*	1	O Star Var		
16795		4.04	07	"	"	"	IIa-Oe*	1	O Star Var		

151 Pg #2

Emulsion Batches:

Date 1988 oct 22/23 Observers B/m-T.m

Diffuser OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50342	HD 24912	03 52.5	+35 30	02 31	02 38	00 30 W		Fe Ne clear	90/90
50343	HD 24912	03 52.5	+35 30	02 45	02 53	00 45 W		Fe Ne clear	90/90
50344	HD 24912	03 52.5	+35 30	02 59	03 08	01 00 W		Fe Ne clear	90-96
50344T	Spot Gli	for 50338-350		15 min @ 15V		D4 3900 D3 4300	D2 4810		
50345	HD 24912	03 52.5	+35 30	03 15	03 22	01 14 W		Fe Ne clear	90/90
50346	HD 24912	03 52.5	+35 30	03 28	03 36	01 28 W		Fe Ne clear	90/90
50347	HD 24912	03 52.5	+35 30	03 44	03 54	01 46 W	+35 42	Fe Ne clear	90/90
50348	HD 24912	03 52.5	+35 30	04 00	04 09	02 01 W		Fe Ne clear	90/90
50349	HD 24912	03 52.5	+35 30	04 16	04 24	02 16 W		Fe Ne clear	90/90
50350	HD 24912	03 52.5	+35 30	04 31	04 39	02 31 W		Fe Ne clear	90/90

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..Fine.....

Focus .....393.....

Spectr. Temp. ....39.5°F.... Dome Temp./Hum. 0°C / 98%

Exp. Mtr. B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
15360		404	07	BC	1200/5008	BS	IIaO-e*	1	O Star var		Ok
15795		404	07	BC	1200/5008	BS	"	1	O Star var		
16680		404	07	BC	1200/5008	BS	"	1	O Star var	T=40°F still set @ 393	Fine
							IIaO e*				
15783		404	07	BC	1200/5008	BS	IIaO e*	1	O Star - var		
15370		404	07	BC	1200/5008	BS	IIaO e*	1	O Star - var		
16030		404	07	BC	1200/5008	BS	IIaO e*	1	O Star - var		
15700		404	07	BC	1200/5008	BS	IIaO e*	1	O Star var		
15400		404	07	BC	1200/5008	BS	IIaO e*	1	O Star var		
16250		404	07	BC	1200/5008	BS	IIaO e*	1	O Star var		

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Wed-Thurs

Echelle Ref with 200u Fiber Feed

Emulsion Batches: .....

Date Oct. 26-27/88. Observers TM ....

Note PST/2 time - 2.5 min behind EST .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Ax	Flat							Tung clear	10s
266C	Comp			EST				Th-A 450/485	120s
	Vega	1989 18 36.5	+38 46	18 27	18 39	W			
				18 41				FeNe clear	120sec
				18 45				Th A	120sec
	Vega	1988 18 36.5	+38 46	1849	1851	0/20W			
	Comp			1900				Th A clear	120sec
	4x Flat			1905 → 1920			(From Spec Cont)	Tung clear	2/10sec
	~~DARK~~ (Dark slide in)			~~19 11~~					10000

Spectr. Temp. ..... Dome Temp./Hum. + / 80% Transparency Conditions Semi clear 154

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
530				Echelle	.4018 1.840	50μ		1872 Ref	JBL	5875Å -3.447	920
400		0	AOV$_a$							T=-3449 OK	574
										Only One line	
480										T=-3447	4526
4:		0	AOV$_a$							Cloud	72
393											456
535, 641, 300, 693										1098, 1341, 617, 1384	

155

Thurs Fri

Date Oct. 27/28/88. Observers K.K.-T.m Simos

Emulsion Batches: .....

.....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2X	Flat							Tung Halo	5 10
"	Comp							Th A	120
	Vega	18 36.5 (1950)	+38 46	20 14	20 50	W			
	Vega	"	"	21 03	21 17			Th A	120
	Comp						Echelle Source.	Th-A	120sec
4X	Flat							Tung 1/2	15s
"	Dark	(15 min to match ~~grad~~ exp time of Vega)		21,2730					15min
	Backed up on Floppy as OCT287 OCT2788.DAT								

Spectr. Temp. ..... Dome Temp./Hum. ...../..... Transparency Conditions ... Clearing, sort of ... 156

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Than Cloud.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
900				Echelle	1.4018 1.840	50u	600, 5890	1870Ref			
300											4179
1000+	max	0	AOK								526
320											310
											4180
230										ripple?	400
										Temp -3.11	22

157 Mon/Tue Echello Reticon with 200u Fiber Feed

Emulsion Batches: .....

Date Oct 31/Nov 1 1988 Observers KK - (Th. A.H.a. Sundman) .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Flat								Tung Fwl/Fl.8	75s
Flat comp								"	75s
Sky				12 43.5	12 45.0			Th A	150s
Sky				12 45.9	12 50.0				
Sky				12 51.0	12 58.8			Th A	150s
Comp Flat								Tung Fwl/Fl.8	75s
Flat								"	75s
Dark	10s								
Dark	360s								1
728C	Comp Th-11							Th A	150s
794S	Vega	18 36.5 (1986.5)	+38 46	17 ~~45~~ 50	1817	W		Th A	150s
926S	"	"	"	18 18	1853	0241 W		Th A	150s
1058S	"	"	"	185730	190723	W	+3844	Th A	150s
1190S	"	"	" (1986.5)	193224	2009	W		Th A	150
S	DARK ~~Deneb~~	~~20 41.0~~	~~+45 14~~	2016	2102	W		~~Th A~~	~~150~~

Spectr. Temp. ..... Dome Temp./Hum. +34°/65% Transparency Conditions ... Clear - some haze 158

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Cloudy by 21 EST

Exp. Mtr. 1800V	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H. 1872	Program	Remarks	Quality
1638					600 .4015	50μ	5875Å	Ref.		-3.24	1465
										-3.16	1450
631											537
1545										-3.10	1370
1647										-3.06	1400
1614										-2.99	1473
1613										-2.94	1508
										-2.92 / FILL UP	
										-2.99	
											6176
	OK	0	HOV4							-4.238	878
										-4.267	1130
									0	-4.355	846
		~~1.25~~	~~HOV4~~							-4.360	1102
		~~1.25~~	~~HOV4~~	[Left Comp Prism IN]						-4.395 Some cloud	

159 #2

Emulsion Batches: .....

Date Oct 31/Nov 1..... Observers T.n. : K.K. .....

Plate No.	Object	R.A. ~~1900~~ 1985	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
13225	Deneb	20 41 0	+45 14	21 05 14	21 18	W			
13886	Flat							Tung Cloud	40
14546	"								40
15206	"				21 25				40
15866	"			21 26	21				40
1652 D	DARK [close up] dark slide in			21 41					3600
1718 D	DARK			23 15					600
SD	DARK not kept			23 26	23 35				

Backed up as NOV 28.DAT

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. Cloudy 160

Focus .....

Spectr. Temp. ..... Dome Temp./Hum + ... / 88%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		1.25	A7Ia	Echelle	600/.405 x	52μ	5875Å	573 Rel		T=-4.410 Thick Cloud	42
											802
											796
											783
										Topup @ 21:30	796
				Comment (Nice spike on middle Row)						After Topup T=-4.646	702
										T=-4.936 @ 2315	24
											39

161

Wed-Thurs

Date . Nov. 2/3/88 . . . Observers . F.Q.S. - T.n. . . . . .

Emulsion Batches:

2.02, 0.32 . IIaO-e. 1A7 - Oct 21/88

1.95, 0.32 * IIaO-e. 1A7 - Oct 22/88

. . . . . Diffuser-IN unfortunately

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50351	HD 36960	05 30.1	-06 04	00 55	01 24	01 37 E	-06 03	Fe Ne Clear	?/90s
50352	HD 36959	05 30.1	-06 04	01 39	02 13	00 47 E	-06 03	Fe Ne Clear	90/90sec
							Diffuser OUT		
50352T	Spot Calib for 50351-53				15 min @ 15V	D4 3900	D3 4300	D2 4810	
50353	HD 36960 ~~Spot~~	05 30.1	-06 04	02 19	02 36	00 25 E		Fe Ne Clear	90/90s
50354	HD 23793	03 42.6	+10 50	02 44	03 01	01 98 W	+11 03	"	90/90
50355	HD 20365	03 11.5	+49 51	03 11	03 28	02 44 W	+50 07	"	90/90
50355T	Spot Calib for 50354-59.				15 min @ 15V	D4 3900	D3 4300	D2 4810	
50356	HD 20809	03 16.1	+48 51	03 35	04 02	03 13 W	+49 07	Fe Ne Clear	90/90
50357	HD 42560	06 06.2	+14 13	04 09	04 31	00 53 W	+14 10	"	90/90
50358	HD 42690	06 07.0	-6 31	04 37	05 32	01 54 W	-6 36	"	90/90
50359	HD 45546	06 23.0	-4 42	05 40	06 11	02 18 W	-4 48	"	90/90

Spectr. Temp. +39°F Dome Temp./Hum. +34°F/80% Transparency Conditions Clearing but gusty K02

Focus 393

Spectr. Temp. +37°F Dome Temp./Hum. +31°F/90% ✓ Had to correct turn 44 Dome Balance

* No exp meter for 1st part of 1st exp.

Exp. Mtr. B Filter	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
≈15K *	poor	4.78	B05V	BC	120/508	BS	IIaO-e	1	B_star	NE of close bin pair (Prob v wk FeNe)	OK
12,300	poor	5.67	B2V	"	"	"	"	1	"	FeNe 90secs = 2746 cnts	OK
										↑ this is SW of bin pair	
							IIa0-e				v v
12,270		4.78	B05V	BC	120/508	BS	IIaO-e	1	B star	NE and brighter of pair — some cloud	OK
12,260		5.07	B3V	"	"	BS	*IIaO-e	1	B star	Dke close vis binary	OK
12140		5.15	B3V	"	"	BS	"	1	"	Fld drawn	OK
							IIa0-e²	+	+		v v
12218		5.29	B5V	BC	1200/508	BS	"	1	B star	cloud	OK
12700		4.48	B3V	"	"	"	"	1	"	cloud	OK
11935		5.05	B2V	"	"	"	"	1	"	cloud during 1st half	OK
12097		5.06	B2V	"	"	"	"	1	"	semi cloudy	OK

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Thurs-Fri Stefl

Date Nov 3/4/88 Observers ~~Steffl~~ T.G

Emulsion Batches: $8^m 68^o$ IIaO-e 147 - Oct 22/88
1.65, 0.24
Diffuser Out

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50360	KX And HD 218393	23 02.6	+49 39	18 20	20 16	0013 E	+50 06	FeNe clear	90/60/90
50360T	Spot Calib for 50360-61.				15 min @ 15V	D4 3900	D3 4300	D2 4810	
50361	O AND HD 217675	22 57.3	+41 47	20 37	20 42	0018W	+	FeNe clear	90/90

Spectr. Temp. 144°F Dome Temp./Hum. 427/72% Transparency Conditions Cloudy 124

Focus 3.91

Spectr. Temp. ..... Dome Temp./Hum. 198%

Exp. Min.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B Filter 4580 732	OK	7.28	B3pe K III	BC	1200/508	BS	IIaO-e	1	Shell star	cloud	sl wk.
							IIaO-e				v l ~
7900	OK	V= 3.6	B6e	BC	1200/508	BS	IIaO-e	1	Be star	some cloud	**

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Mon-Tues

Date Nov. 7/8/88 Observers ~~Stef~~ I/Tan

2.78, 0.31

Emulsion Batches: ~~0.98-92E~~ Nov 3/88

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50362	O And HD 217675	22 57.3	+41 47	20 08	20 18	00 08W		FeNe Clear	12-17
				~~20 22~~				FeNe Clear	~~12~~
50363	HD 217675	22 57.3	+41 47	20 22	20 30	00 20W		Diffuser in	12 12
50363T	Spot Calib for 50362-63			15 min @ ~~15V~~		D315V 4810	D 7V HL	~~D2 7V~~ ~~C462~~	*

Spectr. Temp. 44°C Dome Temp./Hum. 40% / 70% Transparency Conditions. Cloud coming in 166

Focus 395 hole closing

Spectr. Temp. Dome Temp./Hum.

Exp. Min.	Seeing	Prg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B filter in		V									
19000		3.6		BC	1200/405	BS	098 02E	1	Be star	* B filter in 12 sec FeNe = 350 cnts * B filter out D. fuse in for FeNe	Fair star Exp OK
B filter out											
29428		3.6	Bee	BC	1200/405	BS	098 02E	1		In Cloud [12 sec FeNe = 152 cnts]	OK
* Note	D1 Hα	TV	for last set				098 02E				V
ie [Middle set may be diff of Hα + 5450]											

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Emulsion Batches:
.....
.....
.....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	FLAT			15 28				Tury 1/16+1.2	3600
	DARK 2 Hrs [shutter was left open Instead @ end)								7200
	DARK 2 HRS. shutter closed			0058					7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2160					1200 48.2	BS					
								IA			
								IA			

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Mon-Tues

Date Nov 14-15 1988 Observers T. Stefl

"Fine" 1.67, 0.24 8m 60s 2.14, 0.35 4m 60s

Emulsion Batches: IIaO-e 147 Nov 3188 098-02e Nov 3188 Diffuse-OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50364	KX AND HD 218393	23 02.6	+49 39	17 49	20 17	00 32W	+50 06	FeNe Clear	60 60 60
50364T	Spot Calib for 50364, 67 & 74.				15 mins @ 15V	DA 3900	D3 4320	D2 4810	
50365	HD 218393	23 02.6	+49 39	20 24	22 18	02 33W	Diffuser IN *	FeNe Clear	8-8-8
50365T	Spot Calib for 50365-66.			15 min @		D3 15V 4810	D1 TV Hz	D2 TV 5450	
50366	HD 217675 O And	22 57.3	+41 47	22 28	22 44	03 02 W	+42 12	FeNe Clear	12-12
50367	"	"	"	22 52	22 56	03 14 W	*	FeNe Clear	90-90
50368	HD 218393	23 02.6	+49 39	23 05	01 22	05 34W	+50 06	FeNe Clear	60-60-60
50369	HD 33328 ? EXP	05 04.4	-8 53	01 36	01 45	00 03E		FeNe Clear	90-90
50370	HD 26162	04 03 34	+19 21	01 54	02 59	02 18W	+19 34	"	90-90
50371	HD 33328	05 04.4	-8 53	03 09	03 20	01 32 W	-8 48	"	90-90
50372	"	"	"	03 26	03 37	01 49W	"	"	90-90
Em 109. TN	HD 53925	07 01 18	+37 36	03 50		00 09W	Em size 39x39	4 frames,	
110. TN	"	MORE frames		03 55		00 15W	"	5 frames	
50373	HD 44131	06 15.0	-2 54	04 17	05 24	02 23 W	-2 59	FeNe Clear	90-90
50374	HD 33328	05 04.4	-8 53	05 42	06 26	3431 W	-8 37	"	90-90

Spectr. Temp. 47°f Dome Temp./Hum. 42°f / 66% Transparency Conditions . Some cloud 170

Focus . . . 391

Spectr. Temp. 38°f Dome Temp./Hum. 43°f / 96% * I Used Fans for 20 mins before observing. Moderate NW wind - seeing appears OK but difficult to judge.

Exp. Mtr. B filter in	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4900	*	7.28	B3pe	BC	G=5430	BS	IIaO-e	1	Shell Star	Lobelle 1"63"	
4965			K1III		1200/508					60sec comp = 1590 cts	OK
							IIaO-e				
no filter											
20140			B3p		G=4270					Set 391 (cancelled by Cloud)	
19500		7.28	K1III	BC	1200/405	BS	098a2e	1	Shell Star	8 sec FeNe = 1600 cts	OK
							098a2e				
		V=									
39000		3.6	B6e	BC	1200/405	BS	098a2e	1	Be Star	Cloudy	OK
B filter in											
9459		"	"	BC	600/508	"	IIaO-e	1	Be Star	*diffuser-Out	v.s. wk
3550			B3V								
2000		7.28	K1III	n	" XFWHM	YFWHM	"	1	Shell star		s.l. wk
				FH0000109.TN	Frame 1	3.2910213	2.965241				
10,500		4.97	B2IV	"	2	3.2922238	3.091658	1	B star	SE of bright pair	OK
		V=			3	2.1337514	3.287762				
8657		5.5	gK1	n	4	2.1765281	2.971655	1	Std Vel	T=+38°f, Set 393	OK
				FH0000110.TN	Frame 1	2.1795402	2.952981				
11,114		4.97	B2IV	"	2	??? (lens problem)		1	B star		OK
					3	2.1875981	2.089885				
11,123		"	"	"	4	2.1751994	1.952469	1			OK
		V=							TV guider in	Seeing Tests (no wind	
Int(x4)		6.19	K1III		Slit Head	Slit	Guiding	View	("N" posn)	some cloud coming)	
						150u					
Int(x4)		6.19	K1III		n	Slit	~~IIaO-e~~	"	n	In the clear	
						150u					
5400	(V=4.8)	6.5	gM1	BC	1200/508	BS	IIaO-e	1	Std Vel	some cloud	OK
9,960	poor	4.97	B2IV	"	"	"	"	1	B star	Reverse!	OK

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Tues/Wed — Andrew YEE

Date Nov. 15/16/88 Observers ..... Tn. - Fds.....

1.66, 0.24 8M 68
1.56, 0.23

Emulsion Batches:
IIa-O.C. 147 — Nov 3/88
*IIa-O ..... - NOV. 15/88
..... Diffuser OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50375	HD 3360	00 31.4	+53 20	18 01	18 08	03 05E		FeNe Clear	90-90
50376	MD 11415	01 47.1	+63 10	18 24	18 29	0 40 0E	+63 34	"	90-90
50377	HD 3712	00 34.8	+55 59	18 39	18:55	0218E	+56 ~~24~~	"	90-90
50378	HD 20365	03 11.5	+49 51	19:12	19 50	0400E	+50 07	"	90-90
50378T	Spot Calib for 50375-50380				15min @ 15V		D4 D3 3400 4300	D2 4810	
50379	HD 20809	03 16.1	+48 51	20:01	20 37	0319E	+49 07	FeNe Clear	90-90
50380	HD 16908	02 37.5	+27 16	20:48	21:20	01 55E	+27 35	"	90-90
50381	HD 22951	03 36.0	+33 39	21 34	22:43	0134 E	+33 52	"	90-90
50381T	Spot Calib for 50381-82				15min @ 15V		D4 D3 3900 4300	D2 4810	
50382	HD 32630	04 59.5	+41 06	22:55	23 21	0219 E	—	FeNe Clear	90-90

Spectr. Temp. +41°f Dome Temp./Hum. 38°f/85% Transparency Conditions Scat. Cloudy

Focus 3.93

Spectr. Temp. 40°f Dome Temp./Hum. 37°f/93% getting gusty by 22hrs. getting warmer too.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12852		V= 3.66	B2 IV	BC	G=5430 1200/5048	BS	IIaOe	1	B star		ok
12634		V 3.38	B3 III		"	"	"	1	"		ok
11700		V= 2.23	K0 III		"	"	"	1	Std Vel		ok
12000		V= 5.15	B3 V		"	"	"	1	B star		ok
		[illegible]	[illegible]		-	-	"	[illegible]	[illegible]		v v
12000		V= 5.29	B5 V		1200/5048	BS	IIaOe	1	B star	Spect T = 40°f still	ok
12000	poor	V= 4.66	B3 V		"	"	"	1	B star	cloudy	ok
11434	v poor	V= 4.17	B0.5 V		"	"	IIaO-e*	1	B star	cloudy	v s/wk
							IIaO-e*				v v
12000	V poor	V= 3.17	B3 V		1200/5048	BS	"	1	B star		OK

173 Fri-Sat Page #1 Echelle Reticon work 200 u fiber feed.

Emulsion Batches: .....

Date Nov 18/19/88 Observers YEE-Tu .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	DARK								1800sec
	Th-A 1st comp before Vega								150sec
2665	Vega	18 36.5 (1986.5)	+38 46	17~~47~~	17 59	W	+38 43		10min
3~~98~~5	Vega	"	"	18 05	18 30	3 30W		Th-A	150 sec
~~398~~	Th-A after 2nd Vega							"	150sec
	FeNe		(1986.5)	18 ~~54~~					240sec
5965	POLARIS	02 18	+8912	19 06	20 55	0 57E		Diffuser OUT	
	FeNe			21 00					240sec
	Flats x3 (30sec 125 cnts) (30sec 150 cnts) (60secs 241 cnts)							Turn Clear	
~~9265~~	Dark [not saved I guess]		(1986.5)				(diffuser OUT)		3600
9265	~~POLARIS~~ (Comp)	02 18	+8912	~~22 35~~		W ~~E~~		FeNe Clear	120sec
9925	Polaris	"	"	2235	0025	0 50 W	+8919		
10585	FeNe Comp			0026			Diffuser OUT	FeNe Clear	120sec

Spectr. Temp. ..... Dome Temp./Hum. +38°F / 60% Transparency Conditions ..... Clear - some clouds.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../..... Dewar topped up @ 17:15 17H

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
(Without Tube)				300μ Fiber Echelle	600 4013	50μ	5875Å	Ref 1852			
											5962
143000										T=-3.810	873
350K										T=-3.918	1032
											5573
Note - Setting of X grating off					600 4443		5400			T=-3.996	620
					"		5400			T=-4.082	222
											854
										T=-4.086	
		~~0~~ 1	F		600/4440	more Ideal	than	4443		Reversal T=-4.085	4426
273K		2	F		"					Some thin cloud	1020
273K					"	50μ	5400			T=-4.103	4147
									Then	Top up of Dewar	

175 page #2

Date Nov. 18/19.86... Observers ..Yee-Tan.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1124S	FeNe Comp	after Topup		00 36			Diffuser OUT	FeNe Clear	120sec
1190S	Procyon	07 38.6 (1988.5)	+5 16	00?46	01 20	E	+		
	FeNe Comp			01 21					
	Flats x3	[spect contr Tungsten]		#1 (30secs 552cnts) Diffuser OUT			~~Diffuser OUT~~	Tung Clear	
	Flats x3	"		(20secs 987) Diff IN, (20secs 980), (20secs 972)					
	FeNe Comp	(One line; Not saved)					Diff IN	FeNe Clear	120sec
1718C	Th-A	(Echelle source)							120sec
	Procyon	07 38.6 (1988.5)	+5 16	01 4828	0257	01 04 E	+5 13		
	Th-A								120sec
	Flats x3						Diffuser OUT	Tung Clear	~~30~~
	~~DARK [after top up]~~								3600
	Backed up ~~as~~ NOV1888.DAT								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..Some cloud.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 137/95.2 Dark current of Expmeter 600 cnts/min

Exp. Mtr On Echelle	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle Ref	600/.4440	50μ	5400	1872 Ref			3397
210 K		0·8	(F5 II-V)	"	"	"	5400			T=-4·113	921
											3438
(#2 30 secs	1169	) diffuser IN		(#3 20 secs	778	) diff IN	5400			T=-3·983	
All the Same					600 A013	50μ	5875Å			T=-3·969	
					"	"	"			T=-3·957	3603
150 K		0·8	F5 II-V		"	"	"			T=-3·949 much ~~clear~~ cloud	441
					"	"	"			T=-3·905	3656
20secs, 20sec, 40 sec					"	"	"			T=-3·900 / 981, 973	492
					"	"	"				

177 PCS with 200μ fiber Feal

Election Day

Date Nov. 21/22/88 Observers T.n

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~1800 1414~~	FLAT	On Platform		18 12	18 42	Diff IN	ND 20 in	Tung A=1/8	1800s
	Fe A Comp			2132	2142	DIFF IN	ND out	Fe A clear	600
	Fe A Comp			2221	2231	DIFF OUT	ND OUT	Fe A clear	600
	FLAT	on platform		2239		DIFF OUT	ND IN	Tung A=1/8	1800
	DARK								7200
Tests Nov 22/23/88 - KK had reported that he brought signal up x 2x Today.								Still 1/2 of Oct	
1416	FLAT	On Platform		18 14	19 14	DIFF IN	ND IN 20 Igoss	Tung A=1/8	3600
	FLAT 2hrs	"		20 08		"	"	"	7200
	Flat 2hrs			22 42		"	"	"	"

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Cloudy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
40	25				PCS	120/4902	BS	G560A	IB		WRITTEN	
155	35				"	"	"	"	IB			
210	45				"	"	"	"	IA			
250	18				"	"	"	"	IA			
									IB			
PCP - These Signal Levels are low by ≃ 1/4 of at IB → at I2 readings Readings All noted in Dome Logbook												
1370	45				PCS	120/4902	BS	G560	IA	white		
1460	45								IB			
1460	45											

'179

Wed - Thurs PCS with 200μ Fiber

Emulsion Batches: .....

Date Nov. 23/24/88. Observers ..Jan./..Yee..... .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1419	Flat			17 04	17 33 48		ND 2.3	A-1/8	1820
1420 MKI	FeA Comp	19 58 15		17 38			No ND	Fe A Clear	300
SP00 1421 MKI	HD 213947	22 34.1	+26 32	17 51	18 07	00 34 E	+26 30		1800
SP00 1422 MKI	FeA Comp after HD 213947						NO ND	Fe A Clear	300
	V Long DARK			18 23	20 13	Halted @ 6390			11K sec
	Long Fe-A	1900		20 18					600s
FM 111 TN	HD 224085	23 19.9 / 23 54 25	+28 06 / +28 36 (1989)	~2056		00 56 W	In "N" mode	Int X	4
SP 1425 MKI	HD 224085	12	11	20 58	Halted 21 23	01 25 W	+28 32		1500 ~~1800~~
SP 1426 MKI	FeA Comp			21 27				Fe A Clear	600 sec
	Long Dark (will then next night)								

		XFWHM	YFWHM
FM000111.TN	Frame 1	2".836724	2".070000
	2	2".600346	2".369685
	3	2".804667	2".416205
	4	2".918671	2".19444

Spectr. Temp. ..... Dome Temp./Hum. 34°F / 60% Transparency Conditions .Slhazy - V. cloudy..

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Fans on & Dome open for ½hr before Start

Exp. Mtr A	B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
400	50				BC	1200/4802	BS	6560Å	IB			
335	110				"	"	"	"	IB			
900	30	Fine	V= 7.53	K4III	"	"	"	"	IB	Std Lel	Ha Hal @ 9950 sec As high as 400 cts in A	
Note. It was hazy, but clear at 1st, great seeing and signal in A was over 1000 - Then cloudy. I can tell seeing very good by the sharp cut-off in signal when trailing in RA.												
340	100				BC	1200/4802	BS	6560Å	IB			
5	15				"	"	"	"	IB		written	
350	100				"	"	"	"	IA		written	
(39X39 pixels)			V= 7.5	K2e	4 Frames in a Row (not looking in order not to bias things. thin cloud							
400	13	OK	"	"	BC	1200/4802	BS	6560	IA	Rci pgm	getting clearer again	
					"	"	"	"	IA			

Thurs Fri

Date Nov 24/25/85 .. Observers J.v. .....

Hilo Mtn

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1427	2hr dark (Previous night)			Early morning Nov 24					
1428	FLHT			≈ 1730		ND 20 IN	Diff IN	Tung A=18	1800
1429	1st Comp FeA			1737		No ND	"	No A Clear	600
1430	KX And HD 218393	23 02.6	+49 39	17 50	18 20	0047E	+50 04	Eod FeA	600
FM00112.TN	KX And Seeing Test	"	"	1835	FM00112.TN Frame 1 (Image acqu. mode)	XFWHM YFWHM 1.825054 1.408071 2 2.090826 1.599711 3 1.848622 1.979021 4 1.842441 2.155348		Int x 4	
113.TN	" "	"	"	1840				Int x 4	
1432	HD 218393	"	"	1842	19 12	0005W			1800
1433	FeA Comp							FeA Clear	600
1434	HD 213947	22 34.1 1988.5	+26 32	1926	1956	0122W	+26 31		1800
1435	FeA Comp	Short time now 1900						FeA C coag	300
1436	HD 224085	23 49.9	+28 06	2007	2107	0113W	+28 32	(FeA Clear)	3600
FM00114.TN	HD 224085 seeing test (done just before previous exp ≈ 2005							Int	x4
1438	HD 6413	01 04.6 1988.0	+39 59	2121	2151	W+			
1439	FeA								300
	Cont next page [Had to UPLOAD To FIFO's. If you do WD, follow								

Spectr. Temp. ..... Dome Temp./Hum. 167F / 60% Transparency Conditions ... v sl hazy but clear

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Fans Run 40mins before Exp 182 Start

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS						XFWHM YFWHM XFWHM YFWHM	
				BC	1200/4882	BS	6560Å	1B	FM0001113.TN Frame 1 1.235054 1.908691 Frame 5 2.873387 2.840459		
									2 2.010620 1.599711 6 2.942349 3.105881		
									3 1.748522 1.975821 7 2.998406 3.071292		
									4 1.902491 2.155348 8 2.956621 2.997907		
360 98						BS		1A	Duplicate of frames in file 112.		
350 89		V=	B3pe					1A		A=	
650 20	Fine	7.08	+K1III					1A	Std' pgm	calc as high as 880	
39×39 pix	"	"	"	[Image aquisition mode]						Very light SE breeze	
31×31	"	"	"	(Filter light) Guiding View				1A	prob include 1st 4 frames at image aquisit.		
500 20	"	"	"	BC	1200/4882	BS	6560	1A	Std' pgm		
350 90				"	"	"	"	1B			
1200 36	ok	V= 7.53	K4III	"	"	"	"	1B	std vel	calc high as 1400 cnts	
								1A			
400 10	soso	V= 7.5	K2e	BC	1200/4882	BS	6560Å Hrz	1A	Rci pgm	Copy of #1437 Cal calc high as 600 cnts	
(39.39)	Guide	mode	4	Frames	@	00	10W		Very light East breeze		
650 20		V= 6.57	F0V+	BC	1200/4882	BS	6560	1A	Rci telluric std.		
								1B	FM0001114.TN Frame 1 3.126667 2.731061		
									2 3.345241 3.428868		
									3 3.488138 2.912817		
									4 3.512444 3.346138		
~~1A~~											
Exit by "F1" and then Reboot BS12; The PCS failed.									UPLOAD needed		

183 Pg #2 Thurs Fri cont

Date Nov 24/25/88 Observers J.L./Yee

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~1440 (Rej) FeA Comp~~	Obl exp.? Pelek			(Previous window) 22 35		NO ND	Diff IN	FeA Clear	300
1441	Bm Cass	00 53.9	1986.3 +64 01	22 42	23 42	02 49W	+63 58		3600
42	FeA							FeA Clear	300
43	HD 218393	23 02.6	1950 +49 39	23 49	00 23	05 15 W	+50 03		2000
44	FeA							FeA Clear	300
45	HD 32963	05 07.2	1989 +26 19	00 32	01 03	0002E			1800
46	FeA Comp							FeA Clear	300
~~1447~~	~~HD 65583~~ MYSTERY	~~07 49.6~~ *	~~+29 15~~ 1989 (Prob HD 63712,	07 45 02	+ 29 26 (1900)	0209E	(G5) +29 09		1080
1448	FeA	(Note	Check #1387 Oct 15/88)					FeA Clear	300
	HD 65583	07 59.8	+29 15	01 56	02 26	E	+29 12		1800
	~~FeA~~ FM000115.TN	of HD 65583		02 27		" E	"		
1450	FeA		FM000115.TN	Frame 1	XFWHM 2".331437	YFWHM 2".674258		RA Clear	300
				2	2".357106	2".454747			
				3	2".265773	2".335357			
1451	Flat 2hrs	on timer		4	2".659634	2".639294	ND 2.0 3	Diff IN	T_wing H=1/8 1200 ~~300~~

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .. Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum +30.7/94% Fog coming

Exp. Mtr A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
							6560	IA	wrong star N ~~Hg~~ or C ~~Ba~~		
							"	~~IB~~	~~delete~~		
130 10	ok	V=9	H2	PCS BC	1200/1882	BS	"	IB	Obs pgm	as high as 200 counts	
~~130~~				"	"	"	"	IA		~~RA 2000 23 07~~	
600 15		V=7.5	B3V +A1 IB	"	"	"	"	IA	KX And	RA 2000 2307	
								IA			
500 15		V=7.13	G2V	"	"	"	"	IA	Std. Vel.		
				"	"	"	"			* set at	
1100 25	ok	V=7.00	G8III	"	"	"	"	IA	std vel	07 50 7 RA	
				"	"	"	"	IB			
1000 30	ok	V=7.0	G7	"	"	"	"	IB	std vel		
(4x Int)		3x3 pixels		4 frames		"	"	~~IB~~		SI Foggy no wind at all	
4				"	"	"	"	IB			
1200 35				"	"	"	"	IB		~~no~~ Obs + nice night	

Fri Sat

Date Nov. 25/26 ..... Observers ..JN/Yee/MF.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1452	Long FeA			17 24	17 34	NO ND	Diff usa IN	FeA Clear	600
1453.MKI	HD 213947	1988.5 22 34.1	+26 32	17 40 3/4	18 11	00 20 E	+26 29		1800
FN00116.JN	n Seeing test			18 13		"	"	(Int x 4)	
1454	FeA				FN00116.JN	Frame XFWHM YFWHM 1 3".502831 2".814746 2 3".260069 2".946111 3 3".424992 2".696935 4 3".430977 2".697287		FeA Clear	300
1455	HD 212280	1988.5 22 22.0	+30 18	18 22	18 52				1800
1456	FeA							FeA Clear	300
x 1457	HD 213389	1988.5 22 30	+49 18	19 02	19 33	01 07 W	+49 16		1800
1458	FeA							FeA Clear	300
x 1459	HD 218393	2000.0 23 07	+50 04	19 39	19 50	00 55 W			
1460	FeA Long Comp			20 03		No ND	Diff IN	FeA Clear	600
1461	HD 217188	1988.5 22 58.3	-00 22.6	20 28	20 58	02 03 W	-00 25		1800
1462	FeA							FeA Clear	300
1463	HD 216489	1988.5 22 52.5	+16 46.9	21 05	21 26	02 37 W	+16 44		1200
1464	FeA							FeA Clear	300
1465	HD 8779	1988.5 01 25.9	-00 28	21 34	22 05	W	-00 26		1800

Spectr. Temp. ..... Dome Temp./Hum. 37°F / 85% Transparency Conditions ~~Some~~ thin. cloud. or. haze.

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... / .....

Fans On for ~ 1/2 hr before start
5 mi East breeze

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst. BC	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
~~1350~~	~~30~~				PCS	1200/482	BS	6560Å	IA			
1350	30	OK	V= 7.53	K4III	BC	"	"	"	"	Std Vel		
39x39 pixels		~~SOSO~~ OK	"	"	4 frames, "N" mode for Guider, Image above						Fiber circle is guide image.	
					PCS	1200/482	BS	6560Å	IA			
450	12		V= 7.5	F/G 5III	PCS	1200/482	BS	"	"	Mki pgm		
					"	"	"	"	"			
1200	30	SO SO- OK	V= 6.4	K2III	PCS	"	"	"	"	Mki pgm	As high as 1700	
350	100				"	"	"	"				
		OK	V= 7.3	B3pe HK I III	"	"	"	"	"	Stet pgm	Clouded out	
380	100				"	"	"	"	IA			
400	12	O.K	V= 7.3	K0III	"	"	"	"	"	Mki pgm	Clear again!	
					"	"	"	"	"			
1600	50		V= 5.6	K1.5 II-IIIe	"	"	"	"	"	Mki pgm	As high as ~~2400~~ 2200 counts	
					"	"	"	"	"			
700	20		V= 6.4	960	"	"	"	"	"	Std Vel	thin cloud	

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pg #2

Date Nov. 25/26 1988. Observers T.G./Yee/MF

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1466	FeA long			2206	2215				600
1467 MKI	Flat 2 hrs.								
			/						

Spect
Focu
Spect
Exp.
350

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3890				~~PCS~~ BS	1200/4827	BS	6560Å	IH			

189 Thurs Fri Page 1

Date Dec. 1./2./88.... Observers ..JBt.-Tn.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flats x4 Before opening or moving Dome or telescope					Platform etc			10sec
FM00117.TN	HD 212222	22 29.8 Seeing test	+42 04.7 (2000)	17 44		0010E	+41 58	Int	x4
530-728	Flats x4 After all Opening up & setting up on Previous Star						+41 58		10sec
745	FeNe Comp Long [Signal too strong: Bonds Plot and Program]						Diff IN	FeNe Clear	240sec
860S	FeNe Comp	1988.5					Diff OUT	"	120sec
926S	Deneb	20 41.0	+45 14	18 15	18 50	0236W	+45 12		35min
992S	FeNe Comp (Signal too strong)			1850			Diff OUT	FeNe Clear	120sec
	Flats x4			1857		0240W	DIFF IN		10sec
1322S	Deneb	20 41	+45 14	19 09	20 08	0354W			
	FeNe						DIFF IN		120
-1652	Flats x4	[691, 682, 683, 684]		20 16		Tung A=Clear	DIFF IN		10sec
1780	DARK	Lights		OUT					360S
1784-1782	FLATS x4	663, 661, 657, 655		2226			Diff IN	Tung Clear	10sec
	Flats x4 [after Top up by Andrew]			2328			Diff IN		
				Otherwise, no one went into Instr Room since after					

Spectr. Temp. ..... Dome Temp./Hum. 29°/75% Transparency Conditions .. Part. Cloudy Mostly 190

Focus ..... Cross Grat #14 51 Gusty wind NW 14 knots

Spectr. Temp. ..... 4016 Dome Temp./Hum. ..... note Expmeter Dark 1min = 380

Exp. Mtr.	Seeing	Ptg Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality Cuts
Fans not turned on for Expmeter	poor	V= 63	B	BC	600/4016	50μ Fiber Head	5875A	18Z Rat			700 each
						50μ	5875A			No Fans on before	
										Fans turned on ≈ 18h15	≈ 700 each
											14500
↓ Expmeter turned on				FM000117.FN		XFWHM	YFWHM			Dome turned on. Done before set up on star	14558
19,300	poor	V= 1.25	A2b		Frame 1	4.713312	4.092457			Rhump at Lower Right of windows & Cloud too	274
					2	4.556231	4.160442			Fans off @1855	14500
					3	4.713105	4.329815			T = -4.759	≈ 700 each
58000					4	4.792467	3.358365			(Rhump at Lower Right)	408
	Turned Expmeter off										10419
										-4.759	
										-4.805	43
										Top up @ 2316	
Cnts 662, 661, 658 657											
P.S. These are tests of mechanical stability of establ.										T - 4.746	

191 Page 2 Cont of Previous tests

Emulsion Batches: .....

Date Dec. 1/2 Cont. Observers T.H. .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flats x4			02 04	02 08		Diff IN	Tung Clear	10sec
	LONG DARK			02 12					7200
Note → Dec 2/3/88 Fri-Sat				Tn/Yee					
Dec 2/88	4 Flats	From Echellex program (Tung Halide)					"	"	10 sec
cont	4 flats (2665→4645)			17:48	1752	Platform	Diff IN	n	10sec
5965	DARK			20 13	20 39				
6625	FeNe			20 49			Diff IN	FeNe clear	90sec
Fm 18 IN	HD 11905	01 57.9 (2000) 1989.5	+41 41	21 04		≈00.2E Reversed		Int	x4
	Polaris	02 20.7	+89 13	21 30	2043	01 05W	+89 18		
	FeNe							FeNe Clear	90sec
	Flats x4 before top up and Exp Meter Fan turned on)								
	FeNe after top up								90sec
	Procyon	07 38.6 1989.5	+5 16	23 09	0001	E	+6 12		
	FeNe			00 02					90sec

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 28°F/90% Temp outside had fallen to 24°F in Dome

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								659, 656, 668, 654			~~657~~
	Dome Temp = 30°F				H=90° at beginning					~~T = -4.716~~	
677, 668, 670, 664					600 .4016	BS	5875Å	Ref 5875		T = -4.716	
					XFWHM YFWHM						18
				FMOSOUT.TN Frame 1	? ? ? ? (Asc. product)						
					2 3".286890 2".682910						8073
					3 3".049770 2".765323						
					4 3".431603 3".024363					Slight wind from West	
4 Frames	Soft	V= 6.53								Frame turned on - the seeing test	
	poor	J	F-		600 .4016	BS	5875Å		Asm Spkk	Frame after 2155	570
											8048
	648, 643, 637, 635				Then top up [Exp meter dark = 2400/min						
										T = -4.757	8249
87, 300	POOR	V 0.18	F5 W-V	BC	600 4016	BS	5875Å				1098
Note: As far as tests of mechanical stability; No one ordered instr Room until 2323 hrs for top up											8214

193 #2 Cont of Echelle Ref Obs with 200μ Fiber Feed

Emulsion Batches: .....

Date Dec 21 31 88 Observers Tn Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
FM00119.TN	HD33202 *	No good; IHe dbl, Δm=.3	Sep 16"	00 21		00 13E	+37 14	Int x4	
1322S	Sirius	06 44.7 1988.5	-16 42	00 33	00 45	01 27E	-16 45		
1368S	FeNe			00 46				FeNe Clear	90sec
1454S	Sirius	06 44.7	-16 42	00 49	01 06	E			
1520S	"	"	"	01 07	01 25	E			
1586S	"	"	"	01 26	01 42	00 30E	-16 45	FeNe Clear	90sec
1718S	Regulus	10 07.8 1988.5	+12 01	01 50	03 15	02 22E	+11 58		
1784	FeNe							FeNe Clear	90sec
FM00120.TN	HD 70647	08 24.7 2000	+42 01	4	Framos	39x39 Pixels		Int x 4	
1210TN	"	" 1988.5 "			0327	00 20E	+42 00	Int x 4	
1550S	FeNe Long	06 37.1	+16 25						240sec
	HD 47105	06 37.1	+16 25	03 47	05 02	W	+16 23	FeNe Clear	90sec
	Flats x4	&		0509				Tung Clear	10sec
	ThA [From Echelle; Prism moved with Cable]							ThA Clear	300
	[redacted]	GLONG started							

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ..... Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 27°F / 98%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
"N" mode	Poor	V 62		4 Frames on Fiber head			39x39 pixels			Steady West wind	dbl
70K		V= -1.66	AO	BC	600 .406	BS	5875Å			T=-4.113 -	764
70				XFWHM YFWHM				XFWHM	YFWHM		8024
		FM00019.TN	Frame 1	3".246562 2".107703		FM00020.TN	Frame 1	2".571198	2".156796		
102K	Poor	(Not good, double star)	2	3".329478 2".838658			2	2".731343	2".269749		
			3	3".273404 3".225931			3	2".519497	2".413593	T=-4.079	1147
			4	3".979099 3".696971			4	2".512563	2".603320		
103K										T=-4.057	1058
				XFWHM YFWHM				XFWHM	YFWHM		
103K				FM00021.TN Frame 1 2".571198 2".156796			Frame 5	2".721206	1".907227		1181
				2 2".731343 2".269749			6	2".519150	2".277104		
99K	Poor	V= 1.35	B/W	3 2".519497 2".413593			7	2".547763	2".404336		~~7886~~
				4 2".512563 2".603320			8	2".742180	2".045926	T=-4.096	~~7886~~
~~7800~~				Duplicate of frames in file 120.							7800
~~14000~~		V= 6.18	gK5	"N" mode at IV grades [on Fiber optic Head]						SI breezy from South	~~7886~~
Note - 8 Frames 1st 4 are previous Record 2nd 4 done the same, ie nothing changed, but I noticed that 1st 4 when overlooking them, had a "Hole" in bot images.											14500
80K	~~950~~	V= 6.93	A/IV	BC	600.406	BS	5875		Ammonia KK	T=-4.065	592
678, 676, 668, 665				"	"	"	"				
				"	"	"	"				14000
[redacted]				Backed UP as DEC0288.DAT							

195

Sun – Mon

Date Dec. 4/5 88 Observers Bln – Yee

$8^m 68^s$ Emulsion Batches: IIa-O e. 147 Nov 15

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50383	HD 199579	20 56.2 (1988)	+44 53.3	18:52	19:25	03 08 W	+44 49	Ne/Clear	90

Spectr. Temp. 32F Dome Temp./Hum. 32F/68% Transparency Conditions O.K. - cloudy 196

Focus 34.7

Spectr. Temp. 32F Dome Temp./Hum. 32F/77%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1400	Pmr	V= 5.76	068	6.0	83-/4.2	6.5	II a-D	1		Cloud over	wk

197 Tues-Wed

Date Dec. 6/7 88 Observers Duff-Tn-Yee

1.41, 0.18 2nd batch IIa0-e 118 Dec 6/88 8m 680 7 hrs evacuated

Emulsion Batches: IIa-0e IAT Nov 15 1.76, 0.28 1.69, 0.24 098-02e 4m 680 Dec 6 (Diffuse OUT for IIa-0 exps.)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50384	HD 217675 0 And	22 57.3	+41 47	17 42	17 48	0026E		FeNe/Clear	90-90
50385	HD 218393 KX And	23 02.6	+49 39	18 00	20 13	01 53 W	+5006	FeNe/Clear	60-60-60
50385T	Spot Calib for 50383 (Previous Night) +50384-86+(87-90) 15 min						@ 15V 3900 D4	D3 4300	D2 4810
50386	HD 33328 λ Eri	05 04.4	-08 53	20 27	21 04	03 17 E	-8 47	FeNe Clear	90-90
50387	HD 218393	23 02.6	+49 39	21 26	23 20	05 00 W	+50 06	FeNe* Clear	7-7-7
50388T	Spot Calib for 50387-88 15 min @ 15V				D3 4810	D1 Hα (7V)	D2 5450 7V		
50388	HD 217675 0 And	22 57.3	+41 47	23 30	23 38	05 24 W	+42 13	FeNe* Clear	11-11
50389	HD 33328 λ Eri	05 04.4	-08 53	23 48	00 05	00 16 E	-8 48	FeNe Clear	90-90
50390	"	"	"	00 12	00 22	00 01 W		"	90-90
50391	HD 26162	04 08.4 AR6.5	+19 34	00 31	01 32	02 10 W	+19 32	FeNe Clear	90-90
50392	HD 33328	05 04.4	-08 53	01 34	01 54	01 33 W	-8 48	"	90-90
50392T	Spot Calib for 50392-95				15 min @ 15V		D4 3900 D3 4300 D2 4810		
50393	28 Tau	03 48.5 1988	+24 06	02 04	02 28	0328 W	+2402	"	90-90
50394	HD 36576 120 TAU	05 32.5 2000	+18 32	02 41	03 20	0235 W	+18 29	FeNe Clear	90-90
50395	HD 33328 λ Eri	05 04.4	-08 53	03 38	0350	0330 W		FeNe Clear	90-90
50395F	Focus					00	+15 0	"	90/90

Spectr. Temp. 42F Dome Temp./Hum. 39F / 68% Transparency Conditions Clear - sl. hazy 198

Focus 393

Spectr. Temp. 41°f Dome Temp./Hum. 38F / 88%

Fans on for ≈ 40 mins before 1st Exp. getting gusty

Exp. Mtr. B Filter IN	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12000	O.K.	V= 3.6	B6e	BC	G=5340 1200/50.8	BS	IIa-0e	1	Be star		OK
5000 5000	O.K.	V= 7.28	B3pe K1III	BC	"	BS	"	"	Shell star		OK
							"				V V
10000	poor	V= 4.47	B2IV	"	"	"	"	"	B star	T=45°f, Set 495	VS/V.K
B filter OUT 20000/20000	so so	V= 7.28	B3pe K1 III	"	G=4270 1200/495	BS	098-02e	1	Shell Star	*Diffuser IN/No Filter 1 Exposure	Fo Nes str Sh Exp OK
							098-02e			7sec Fe He = 1600 cnts/exp meter	V V
B filter out 4/8/16	poor	V= 3.6	B6e	BS	1200/495	BS	098-02e	1	Be star	~~90 sec Fe He = 3 counts~~	Fo Nes Istr Exp OK
13400	"	V= 4.47	B2IV	"	G=5340 1200/50.8	"	IIa-0e	1	B star	(Diffuser OUT for Blue exps)	OK
12000	soso	"	"	"	"	"	"	"	"		OK
6300	poor	V= 5.50	K1 III	"	"	"	IIa 0e*	"	std Vel	still v gusty	SI v.k
11,377	poor	V= 4.47	B2IV	"	"	"	"	"	B Star		OK
							" *				V V
11500	poor	V= 5	B8	"	"	"	"	"	Be star		OK
11000	poor	5.5	Bp	"	"	"	"	"	-11	Set 393 T=40°f (Upcoord Broken) File more	
2871	poor	V= 4.47	B2IV	"	"	"	"	"	B star	Cloudy (leveled)	~~Fo Nes~~
				"	"	"	IIa 0	"		41°f Set 393	Center SI Red

199 Wed-Thur.

Date Dec. 7/8 88 Observers Stoll-Tn-Yee

Dev Dec 9/10 1.57, 0.20

Emulsion Batches: IIa-0e I18 Dec 6/88

Diffuser OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~50395~~ 96	~~HD 218393~~ KX And	23 02.6	+49 39	23 00	23 28		+50 14	Fe Ne/ Clear	60-
50396	HD 33328 λ Eri	05 04.4 (1900)	-08 53	23 42	23 57	00 16 E	-08 48	Fe Ne/ Clear	90-90
50397	HD 36576	05 32.5 (2000)	+18 32	00 08	00 46	00 05 W	+18 30	"	90-90
50398	HD 33328	05 04.4 (1900)	-08 53	00 56	01 10	00 53 W	-08 48	"	90-90
50399	HD 47054	06 31.7 (1900)	-05 08	01 25	01 59	00 14 W	-5 13	"	90-90
50399T	Spot Cals for Pleone	50396 (1900)	50402	50405 (5:06)	15 min @ 15V	04 3900	03 4300	02 4810	
50400	HD 23862	03 43.2 (1900)	+23 50	02 09	02 33	03 34 W	+2405	Fe/Ne Clear	90-90
50401	HD 33328 λ Eri	05 04.4 (1900)	-08 53	02 41	02 56	02 38 W	—	"	90-90
50402	HD 36576	05 27.7	+18 28	03 36	03 56	03 15 W	+1830	"	90-90

At midnight, A DG Andrews called to report an apparent fire ball. It spanned 30° in Sky and headed SW @ 23:13 EST, fuse "broad."

Spectr. Temp. 39F [redacted] Dome Temp./Hum. 29F/85% Transparency Conditions clear ... -5/haze ... 200

Focus 394

Spectr. Temp. 29F Dome Temp./Hum. +21F/90% Very very bad seeing

Disp Mtr. B filter in	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	V. poor	V= 7.28	B3pe K1 III	BC	G=5340 1200/50.8	BS	IIa-0e	1	Shell star	Very poor seeing, discarded	
11000	"	V= 4.47	B2 IV	"	"	"	"	"	B star		ok
11000	"	V= 5.5	Bp	"	"	"	"	"	Be star [redacted]	comp Exp meter cuts 90sec Foke = 3019	ok
11600	"	V= 4.47	B2 IV	"	"	"	"	"	B star	T=35% set/sd 394	ok
10300	"	5.42	B8	"	"	"	"	1	Be star		ok
		~~5.00~~	~~B8p~~				IIa0-e				vis
10520	so so/ POOR	5.00	B8p	BC	1200/508	BS	IIa0-e	1	Be Star		ok
10800	POOR	V= 4.47	B2 IV	"	"	"	"	"	B star	T=30% - Set to 395	ok
5700	poor	V= 5.54	Bp	"	"	"	"	"	"	Clouded over	sl wk

201

Thurs - Fri

Date Dec 8/9/88 Observers T.h Stefl

Emulsion Batches: Dev next night IIa-O ae 1.1.8 Dec 8
1.52, 0.20
Diffuser OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50403	HD 218393	23026	+49 39	1808	2042	0230 W	+5003	FeNe Clear	60-60
						D4	D3	D2	
50403T	Spot Cals for	50403-04	+50407		15 min	ISV 3900	4300	4810	
50404	HD 217675 O And	22573	+41 47	2051	2102	0257 W	+4220	FeNe Clear	90-90

Spectr. Temp. +32°F Dome Temp./Hum. +25°F / 70% Transparency Conditions 5/ hazy

Focus 395

Spectr. Temp. Dome Temp./Hum. +23°F / 85% Fans on for 30 mins before 1st exp

Exp. Mtr. & Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5013 5000	poor	7.4	B3pe+ K1 III	BC	1200/50.8	BS	IIa0-e	1	Shell Star	cloud coming at end	~~ust~~ wk
							IIa0-e				~~ust~~ wk
1800	5.0	V= 3.63	B6p	BC	1200/50.8	BS	IIa0-0	1	Be star	cloudy T=+29°	wk

Dec 8m e687 Dec 9/10

Emulsion Batches: Da-Oe 1.A.8 — Dec 6

Date Dec. 9/10 Observers Fds / Tm / Yee Dec 8m e687 Ila-Oe 1.A.8 — Dec 8

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50405	HD 3240 ~~3360~~	30-6 0 ~~31 33~~	37 +53 ~~20~~	17:~~45~~	18 19		+54 02	Clear Fe/Ne	90-90
50406	HD 3360	00 31.4	+53 21	18 30	1837		+53 46	n	90/90
50407	HD 4142	00 38.8	+47 19	18:45	18 55	00 52 E	+47 44	Fe Ne Clear	90-90
50407F	Focus test					00 00	+30°		90-60

Spectr. Temp. 30 F ..... Dome Temp./Hum. 22F / 79%. Transparency Conditions Clear - cloudy .....

Focus ..... 395 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. B fiber	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12000	poor	5.15 3660	305 B3IV	BC	G=5430 1200/50.8	BS	IIaO-e	1	B STARS	WRONG STAR!!! But we identified it.	ok
12,100	"	3.66	B2II	"	"	"	IIaO-e	1	B Star	Spot plate from Dec 7/15	ok
2250	"	5.67	B5V	"	"	"	IIaO-e	"	"	clouded over	wk
							scrap IIaO	1		T=26.5° Set 395	Right on

205

Sat-Sun

1.57, 0.19 8m 60s

Emulsion Batches: Ha-e I.I8 Dec 8

Date Dec 10/11/88 Observers Fds./T.N

DIFFUSER OUT

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~50408~~	HD 11415	1 47.1	+63 10	17:42	18 03	02 50E		FoNe Clear	90/90
50409	HD 20365	3 11.5	+49 51	18:15	18 56	03 15E	+50 05	"	90/90
50410	HD 20809	3 16.2	+48 51	19 06	19 46	02 32E	+49 04	"	90/90
50411	HD 16908	2 37.5	+27 17	19 54	20 17	01 22E	+2735	"	90/90
50412	HD 22951	3h 36	+33 38	20 26	20 56	01 42E	+33 52	"	90/90
50413	HD 24640	03 500	+3447	21 07	21 59	00 52E	+3458	"	90/90
50414	HD 26912	04 10.1	+08 38	22 08	22 27	00 37E		"	90/90
50415	HD 26326	04 04.7	-16 39	22 36	23 40	00 33W	-16 28	"	90/90
50415T	Spot Calib for 50408-19					15 minute lag	D4 3900 D3 4300	D2 4810	
50415F	Focus test (cold one)			00 00		0 0	-16 28	FoNe Clear	120/90
	Note extra plate is prob incorrectly done focus test (maybe no stellar comp)								
50416	HD 35468	05 19.8	06 15	02 42	02 44	02 15W		FoNe Clear	90/90
50417	HD 34503	05 12.8	-6 51	02 53	03 30	03 15W		"	90/90
50418	HD 32630	04 51.5	+41 06	03 41	03 46	03 47W		"	90/90
50419	" "	"	"	03 55	04 01	02 02W		"	90/

Spectr. Temp. 25°f ..... Dome Temp./Hum. +15°f / 70% Transparency Conditions ..... Clearing 206

Focus .. 396 .....

Spectr. Temp. ..... Dome Temp./Hum. +5°f / 90% Clouds & snowy Obs

Exp. Mtr. B Filter	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12,200	—	3.38	B3III	BC	1200/50.8	BS	IIaOe	1	BSTARS	thin cloud	discarded at blank cap stuck ??
11,999	5080	5.15	B3V	BC	"	"	"	1	"		OK
12,010		5.29	B5V	"	"	"	"	1	"		OK
12,080	OK	4.66	B3V	"	"	"	"	1	"		OK
12050		4.97	B0.5V	"	"	"	"	1	"	T=20°f still Set 396	OK
12087	poor	V 5.49	B1.5V	"	"	"	"	1	"		OK
12000		4.29	B3IV	"	"	"	"	1	"	T=+19°f Set @ 397	OK
5452	very poor	5.37	B4V	"	"	"	"	1	"	Cloud	Slwk
				"	"	"	"				v slwk
				"	"	BS	IIaOold	1		T=+16°f Set 397	centro v sl blnk
Hartmann Mask MARKED OK (Comp=N Half covered) (Stellar=South Side covered)											extra looks (a/o) OK. v sl/blnk
12,200		1.66	B2III	"	"	BS	IIaOe	1	B star		OK
9909	poor	3.61	B5III	"	"	"	"	1	"		v slwk
12,100		3.17	B3V	"	"	"	"	1	"		OK
12,100	OK	"	"	"	"	"	"	1	"	T=+14°f Set 397	OK

207

1.54, 0.18 8th 68°

Emulsion Batches: IIa-0e 118 Dec 11

Date Dec. 11/12 1988 Observers Bhm - Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50420F	Focus test			17 08	17 12			Fe Ne Clear	90-60
50420	HD 212943	22h 22m.3	+4° 12'	17 25	1906	01 45W	+04 33	Fe Ne Clear	90-90
50421	HD 3360	00 31.4	+53 21	1922	1932	00 02W	+53 45	Fe Ne Clear	90-90
50422	HD 11415	01 47.2	+63 11	1942	1949	00 59E	+63 31	Fe Ne Clear	90-90
50423	HD 20809	03 16.1	+48 51	2000	2047	01 27E	+49 05	Fe Ne Clear	90-90
50423T	Spot calibration for 50420	-27.				15 min @ 15V	D4 D3 3400 4300	D2 4810	
50424	HD 22951	03 36.0	+33 39	2100	2135	01 00E	+33 54	Fe Ne Clear	90-90
50425	HD 23793	03 42.8	+10 50	2148	22 23	00 19E	+11 01	Fe Ne Clear	90-90
50426	HD 24640	03 50.0	+34 47	22 32	23 20	00 31W	+34 57	Fe Ne Clear	90-90
50427	HD 26912	04 10.1	+08 38	23 29	23 50	00 44W	+08 47	Fe Ne Clear	90-

Spectr. Temp. ..15 F..... Dome Temp./Hum. 8F./.66%.. Transparency Conditions ..Clear.....

Focus .....4.3.....

Spectr. Temp. ...6 F..... Dome Temp./Hum. 0F./.71%..

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3711/2504				BC	G=4277 33.0/44.2	BS	IIa-0 22	1	12 Å/mm disp	(Underlighted) discarded — No good — Too dry Comp (by 2 orders) Exp s/str → Exp OK	Exp OK
10288	Poor	2.77	KODAK V	BC	G=4277 33.0/44.2	BS	IIa-0e	L	REV Std.		
12400	O.K	3.66	B2 IV	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star	8 Å/mm	OK
12300	O.K	3.31	B3 III	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star	Forgot to change spectrograph focus !!	OK
12000	O.K.	5.29	B5 V	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star	* Blue ends out of focus	OK
											L-V
12000	O.K.	4.92	KODAK V	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star	The last comparison was fired manually for 2 minutes	Exp OK Vs. smoke
12000	O.K	5.07	B3 IV+ F5 V	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star	The shutter is very stiff ! T=3F Forced too	OK
12000	O.K	5.29	B1.5 V	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star		OK
12100	O.K	4.29	B3 III	BC	G=5430 12m/58.8	BS	IIa-0e	1	Fds star	SPECTROGRAPH CONTROLLER BOMBED!! Cannot fire last 90-sec comparison	OK

209

Tues

Date Dec 13 /86. Observers Th

Emulsion Batches:

ND 2.3 in

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1468	Flat:			16:22	17:22	ND2.3	DIFF IN	Tungsten 1/8	3600
	Long FeA			1750			no ND DIFF IN	FeA Clear	1200
	Long FeNe						Diff IN	FeNe H=1/16	600
	Long DARK			1931	20 31		Shutter Closed		3600
	Long FeA			2344			no ND DIFF IN	FeA Clear	600
	Dark v Long	started		0035 Lights out, Shutter closed,			Coping		10 Ksec

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1800				fiber spec.	1200/48.2	BS	PCS	-20°C		written Tu NOT WE written	
135 75				"	"	"	"	IA	(Coef Curve data)	written } F	
600 20				"	"	"	"	IB		written	
<10 <10				"	"	"	"	IB	lights out too	written	
130 60				"	"	"	"	IB		not written	
3 4				"	"	"	"	IA		not written / written next night	

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Thurs - Fri

Date .. Dec. 15/16/88. Observers ..... T.n. / MKI .....

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
Spot 473	Flat			16 37		0 0	ND 2.3	Tung A=1/4	3600
Fm 122 TN (1474 mkI)	HD 218525 (2000)	23 08.2	+44 33	17 48		0 0 0 0	+44	Int x 4	
	FeA - Long					Diff IN	No ND	FeA Clear	600
	BM Cass (1986.3)	00 53.9	+64 01	18 15	18 45	0040E	+63 56		1800
	FeA Long (Previous exp)			18 50		Diff IN	No ND	FeA Clear	600
Fm 123 TN	HD 224085	Seeing test		19 15		00 35 W	+28 28	Int x 4	
	HD 224085 (1900)	23 49.9	+28 06	19 18	20 19	01 53 W	"	1800+	1800
	FeA Long					Diff IN	No ND	FeA Clear	600

	XFWHM	YFWHM
FM000122.TN Frame 1	5".360204	5".416870
2	6".094834	5".190687
3	5".838391	5".895901
4	5".856887	4".988630

	XFWHM	YFWHM
FM000123.TN Frame 1	5".085910	4".737915
2	5".297208	4".447431
3	6".088597	5".455535
4	6".431594	5".529044

	HD 8779 (1988.5)	01 25.9	-00 28	20 41	21 22	0115 W	-0031	+	600 1800
	FeA - Long					DIFF IN	No ND	FeA Clear	600
	HD 32963 (1988.5)	05 07.2	+26 19	21 45	22 45	0118 E	+26 14		300
	FeA					Diff IN	No ND	FeA Clear	600

Spectr. Temp. ..... Dome Temp./Hum. +14°/70% Transparency Conditions Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ...../.....

Slight NW wind - Ithead boar v gusty earlier in night.

No Funs at beginning

Exp. Mtr A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1900 100				BC	1200/48.2	BS	6560Å	IB	written	SP001472.MK1 Previous tuning Dat written	
39 x 39	poor winds	V= 6.34	A0	2000 nm Head	4 Frames ("N" mode)				opened fast; No Funs; no aiming out		
135 45				BC	1200/48.2	BS	6560Å	IA	written	Funs Turned On @ 1800	
25 5	V poor	V. ≈9	H2	"	"	"	"	IA	Obs pgm		
120 30	(IB clearly darker, but int in IA)						"	IB (intended)	(a bug: supp. imposed on previous IA)		
~~60~~ 39 x 29 8	V poor	4 frames	IT Head image ("N" mode)					~~IA~~		Funs off @ 1900 hrs	
50 8	V poor	V= 7.5	K2e	BC	1200/48.7	BS	6560Å	IA	Rci pgm	cats as high as 90 (cloud)	
120 65								IA			
Note- Seeing tests done, but seeing was apparently so bad as to make focusing difficult. I wonder if focus system is working right also. It seems to go in large increments sometimes and doesn't make any difference other times. Dome T = +12°F											
130 10	V poor	V= 6.4	G60	BC	1200/48.2	BS	6560Å	IA	std vel	down 2 7x From Nov 26/26 cats as high as 220 only	
120 60								IA			
50 6	poor	V= 7.73	G2V	BC	1200/48.2	BS	6560Å	IA	std vel	down 10x From Nov 24/25 Obs of same star	
120 60				"	"	"	"	IA			

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Emulsion Batches: .....

Date .. Dec. 15/16 1988 .. Observers .. Tn / Mki / Yee ....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	HD 6413	01 04.6 (2000 1989.5)	+39 59	23 01	00 02	04 22 W	+39 52		
	FeA			00 04					400
	HD 65583	07 59.9	+29 15	00 19	01 19	01 30E	+29 10		3600
	Fe-A END			01 26		Diff IN	No ND	FeA Clear	600
	Flat Field			01 46		00	platform	Tung A=1/4	
						~~Diff IN~~	~~No ND~~	~~FeAr Clear~~	~~530~~

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 44°F / 85%

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	~~Emulsion~~	P.H.	Program	Remarks	Quality
90	7	poor	V= 6.57	FoIn	BC	1200/~~6852~~	BS	6560 Å	IA	FOR RCF Telluric Source	down 5-7 x from Nov 24/25	
120	60				"	"	"	"	"			
100	7	poor	V= 7.0	dG7	"	"	"	"	"	std. vel.	Channel "B" not blocking green noted @ 01 EST	
120	60				"	"	"	"	"		some cloud/ncl cloudy	
1600	86	(ND23IN, DIFFIN)			"	?	"	"	"	On Timer		

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Sat - Sun

Date ..Dec. 17/18, 86... Observers ..Fds - Tm.....

8m 68s
1.39, 0.17

Emulsion Batches:
IIa-O e 218 Dec 1986
.....
.....No. Diffuser. NO ND

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50428	HD 35468	5h 19.8	+6° 15	23:05	23:07	00 45E		FeNe Clear	90-90
50429	HD 34503	5h 12.7	-6 57	23.16	23:36	0007E	-6 57	"	90-96
50430	HD 36960	5h 30.9	-6 4	23:52	0036	0032W	-606	"	90-90
50431	HD 36959	05 30.1	-0604	0043	0121	0117W	-606		90-90
50431T	Spot Calib for 50428-31				15min @15V	D4 3900	D3 4300 D2 4810		
50431F	Focus test				no diff no ND	0 0	.	FeNe Clear	120/60

Spectr. Temp. ...RT 21°F... Dome Temp./Hum. +12°F / 90% Transparency Conditions .. Hazy - cloudy.....

Focus .....3.17.....

Spectr. Temp. ...20°F..... Dome Temp./Hum. +12°F / 95%

Exp. Mtr	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
R filter		V= 1.64	B2 III	BC	6-5930 1200/508	BS	IIaO-e	1	FUS - STAR		ok
12 000	Sosa	3.60	B5 III	"	"	"	"	1	"		OK
12076	Poor	V= 4.78	B0.5 V	"	"	"	"	1	"	RA Guiding Broken. ?? (Set motion that is)	OK
12000	.	V= 5.67	B1 V	"	"	1	"	"	"	Some cloud Fainter of pair	OK
						.	IIaO-e				ok
				BC	12a/508	BS	IIaO	1		T=+20°F Set 397	Center SI Red
										Center More Red at blue end.	
										(This is the case for most pairs)	

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Mon./Tues. 1.68, 0.24

Emulsion Batches: IIa-0e [redacted] IIIF Dec. 17

Date Dec. 19/20 1988 Observers Fds. - Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50432	HD 3360	00 31.4	+53 47	18:13	18:19		+53 44	Fe Ne clear	60, 60
50433	HD 11415	01 47.1	+63 06	18:31	18:36	01 40 E	+63 31	Fe Ne clear	60-60
50434	HD 16908	02 37.5	+27 24	18:48	19:06	01 58 E	+27 35	"	60-60
50434T	Spot calibration for 50432		-40		15 min @ 15V		D4 D3 D2 3700 4300 4870		
50435	HD 20365	03 11.5	+49 48	19:15	19:45	01 54 E	+50 06	"	60-60
50436	HD 20809	03 16.1	+48 48	19:54	20:56	00 47 E	+49 05	"	60-60
50437	HD 22951	03 36.0	+33 36	21:07	21:25	00 37 E	+33 50	"	60-60
50438	HD 23793	03 42.7	+10 48	21:36	22:42		+11 01	"	60-60
50439	HD 32630	04 59.5	+41 06	22:52	23:06	00 10 W		"	60-60
50440	HD 27192	04 12.6	+50 36	23:23	23:57	01 16 W	+50 49	"	60-60
50440F	Focus test			00:16		00 00	+17 36	Fe Ne clear	120-60

Spectr. Temp. 30.F ..... Dome Temp./Hum. 29 F/89% ..... Transparency Conditions ..... Clear - Cloudy, clear, cloudy...

Focus ..... 394 .....

Fair use on the night the season

Spectr. Temp. 32F ..... Dome Temp./Hum. 35F./88%.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12085	O.K	V= 3.66	B3III	BC	E=5450 1200/30.1	B3	IIa-0e	1	Eta star	The plate exposed before this one scratched & broken on being taken out for examination!! ← Exp OK	*no it wasn't OK
12076	O.K.	V= 2.38	B3III	"	"	"	"	"	"		OK
12027	"	V= 4.66	B5V	"	"	"	"	"	"		OK
							IIa-0e				"
12015	"	V= 5.15	B3V	"	"	"	"	"	"		OK
12030	"	V= 5.29	B5V	"	"	"	"	"		Clouds - light & hazy! Dirty in the eyepiece	v.s.l.w.k
12080	"	V= 4.97	B0.5V	"	"	"	"	"	"		OK
12010	"	V= 5.27	B5V+ F8V	"	"	"	"	"	"	Gets cloudy	OK
12046	"	V= 5.17	B3V	"	"	"	"	"	"	Thin clouds, seeing improved	OK
1056	poor	V= 5.50	B1.5V	"	"	"		"	" Cloudy!	First he-ne comparison fired, the readout at 4 angstroms! Terminated due to cloud!	wk
Fair use on			T= 32F	Focus at	394						no good but interesting

219 Wed. / Thur.

Date Dec. 21/22 1988 Observers KK afternoon / Th. eve. + Yee

Emulsion Batches: .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP001488.mk1	FLAT FM000124.TN frame 1 4h22.3041 3.859506; 2 5h43.6669 4.619740; 3 4h73.1529 4.457376; 4 4h04.3290 4.270417				~17 00	0 0	Diff in ND 2-3	Tung A=1/3	
1489	Fe-A Long			17 03	17 13	0 0	Diff in / no ND	Fe H clear	3600
1492	Fe A Comp.			21:02		00 00		Fe A clear	400
FM000124.TN	HD 19279	03 01	+46 55	21:21		00 01E	+47 11	39x39 pix	
1493	HD 224085	23 49.9	+28 06	21:39.5	H@21:51		+28 31		
1494	Fe-A			22 06			Diff in ND in	Fe A clear	400
1495	Dark	Shutter Closed		01 26	~~H@21:51~~				1200
1496	Fe-A Comp.				02 38	~~02 38~~		Fe A clear	600
FM000125.TN	HD 65583	07 59.9 1989.5	+29 15	~~02 44~~	~02 42	00 27W	+29 12		
SP001497.mk1	" FM000125.TN frame 1 4h51.0178 3.963978; 2 4h73.1573 4.279347		"	02 44	03 13	W	"	Cleared between	1800
1498	" 3 4h50.0002 4h05.1626; 4 4h72.0443 5h55.7730		"	03 18	03 48	01 33W	"		1800
1499	Fe-A...	1989.5		03 49				600sec	Fe A clear
FM126.TN	HD 90861	10 29 19	+28 38	04 03		00 40E	+28 35		
1500	"	"	"	04 05	04 35	00 07E	Fe H @ End		1800
1502	Flat Long	on thm ~~et~~		04 52			Tung. A-1/8		7200

Spectr. Temp. ..... Dome Temp./Hum. 26F/78% Transparency Conditions Clear...Thin Strato.....

Focus ..... 23°F/80% @ 2:30AM Light NNW breeze NW breeze clear 1st spectroscopy test.

Spectr. Temp. ..... Dome Temp./Hum. 18°F 18.4% Fans went off after 1st spectroscopy test

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1 sec				BC	1200/49.2	BS	6560Å	IB	(note SP0014+10 total (- exc. HT)		
300 55				"	"	"	"	"		~~SP0014+91~~ (1 Hr Point done too w/ filter)	
20 50				"	"	"	"	"			
	Poor (Fans on)	V= 6.3±	A0	200 on four head	4 Frames ("N" mode)			Fans not turned on			
90 10		V= 7.5	K2e	"	"	"	"	"	Rich star	Fans turned on at ≈ 21:35 Cooling slowly	
260 60											
25 25								IA			
				BC	1200/49.2	BS	6560 Å	IB		Fans turned on again 02:30AM	
(47x47 Finder)	Poor	V= 7.0	dG7	200 on four head	4 Frames ("N" mode)			Fans had been on for	several hours, Dome Closed		Cloudy Stratus
140 10	"	"	"	BC	(47x47) 1200/49.2	BS	6560 Å	IB	std. vel.	Count as high as 260.	
160 10	"	"	"	"	"	"	"	"	"	Fans off @ 0255	Channel B cutout
270 50				"	"	"	"	"		FH0002b.TN Frame 1 XFWHM 5".397189 YFWHM 5.438471 2 5".435890 5".582940 3 5".733227 6".673179 4 5".667295 5".076225	
(47x47)	Poor	V= 7.2	K2 II	200 on four Head	4 Frames (N mode)				std vel		
180 10	"	"	"	BC	1200/48.2	BS	6560 Å	IB	"	Cnts as high as 250	
1000 50				"	"	"	"	IB			

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Fri Sat

Date Dec 23/24/86. Observers MF - TM - Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
SP00 1503	Flat	While drying out dome		1702	1803	Diffuse IN	ND=2.3	TUNG H=1/8	3600s
FM000127.TN	II Peg HD224085	23 53.9 1989	+28 29	~1800	very gusty - Telescope attacked by wind, ie image bobbing	00 03 W			
1504	Fe-A			18:07	1814	Diff IN	No ND	FeA Clear	400s
1505	II Peg HD 224085	23 53.9 1989	+28 29	18:16	1916	01 16 W	+2831		3600
1506	Fe-A					Diff IN	No ND	FeA Clear	400
FM000128.TN	HD 6413 6314	Seeing Test 2000		1926		00 16W	+39 53		
1507	HD 6413 6314	01 04.6	+39 59	1928	1958	00 48 W	+39 53		1800
1508	Fe-A			1958	2005				
1509	BM Cas	00 54 1988	+64 00	2010	2110	02 12W	+6357		
1510	Fe-A			2112					400
1511	HD 11395	01 54.6 2000	+68 09	~2122	2200	02 00 W	+6801		
SP00 1512	Fe-A at end								400

FM000127.TN Frame	XFWHM	YFWHM
1	2".577968	2".272393
2	2".581762	2".361245
3	2".592931	2".335601
4	2".774020	1".950196

FM000128.TN Frame	XFWHM	YFWHM
1	2".765801	2".456673
2	2".457036	2".156934
3	2".500920	2".579872
4	2".525177	2".034749

Spectr. Temp. ..... Dome Temp./Hum. +36°F / 67% Transparency Conditions .. Fine — v thin cloud

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. +35°F / 80% (Gale Warning) [Diminishing overnight] Gusty From SW & dry & warm outside - Fans turned on and Dome opened @ 17:10 to dry out Dome

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst. 300 m Fiber	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1200	45				BC/PCS	1200/48.2	BS	6560	IB		N & S piers wet at first	
31×31 pixels		OK	V= 7.5	K2e	4 frames	"N" mode	Fiber Head			Seeing test	Fans shut down just before	
260	55				BC/PCS 4 frames	1200/48.2 (~~4 mode~~)	~~Fiber~~ Head	6560Å	IB			
500	20	"	V= 7.5	K2e	"	"	"	"	"	Rci star	Count as high as 600 Fans off @ 19 hrs	
280	55				"	"	"	"	IB			
31×31 pixels		OK	V= 6.6	~~FC~~ K2e	4 frames	"N" mode	Fiber Head			Seeing test	"	
660	25	"	V= 6.6	~~Fe~~ K2e				6560Å	IB	Rci prgm Telluric Std	Not so windy now Count as high as 830	
			[redacted]									
110	10	OK	V= 9	Hα	BC/PCS	1200/48.2	BS	6560 Å	IB	Obs prgm.	Count as high as 150.	
260	50				"	"						
200		OK	V= 7.5	A0	"	"	BS	6560Å	IB	Rci prgm	Halted by cloud	
									IA			

223 Tues Wed

Date JAN 4/5/89 Observers Andy. Udalski/Tn/Yee

Emulsion Batches:
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.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1513	FLAT #1	} previous Night					ND = 2.3	Tung H = 1/8	3600
1514	FLAT #2			22 54	23 54		"	"	3600
1515	FeA Long Comp			~~01 02~~	~~01 12~~		No ND	FeA Clear	600
FM 129.TN	~~HD 6413~~ 6314	Seeing test 8000		4 frames "N" mode		47 x 47 pixels	Fans were not turned on.		
1517	~~HD 6413~~ 6314	01 04.6	+39 59	17 57	18 38	0015W	+39 51		1800 + 1800
	Grating was homed and then brought back to 48.2°								
1519	Long Flat			19 21	21 21		ND = 2.3	Tung A = 1/8	7200

		XFWHM	YFWHM
FM000129.TN Frame	1	8".695743	6".429826
	2	7".268360	5".756505
	3	7".191131	5".418353
	4	5".944562	4".598950

Spectr. Temp. ..... Dome Temp./Hum. -15°C / 70% Transparency Conditions ... Cloudy, IR .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

no wind, but very cold
Fans turned on after 1st scan tests

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
900	35								IB		written	
920	35								IA		written LongDark written to	
210	45								IB		written ~~Jan 4 1995~~	
					200μ fiber head				IB		Some cloud	
80	5	Poor	V= 657	FCVn	BC	1200/482	BS	Hα	IB	Texture std	Much Cloud (Hγ Hδ)	
830	35								IA			
										All FCS Obs by texture up to this point.		

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Mon./Tues.

Date Jan. 9/10 1989 Observers Udalski - Tee

1.51, 0.20 8h 6m Emulsion Batches: IIa-0e IF Dec. 17

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50441	HD 11395	01 46.9	+67 40	18:10	20:56	02 00W	+68 00	Fe Ne Clear	60-60
50441T	Spot calibration for 50441 - 50445				15 min @	15V D4 3900	D3 D2 4300 4810		
50442	HD 48915 (Sirius)	06 45	-16 35	22:36	22:37	01 01W	-16 47	Fe Ne Clear	60-60
50443	HD 35497 (β Tau)	05 20	+28 31	22:59	23:01	00 36W	+28 30	"	60-60
50444	HD 20902 (α Per)	03 17.2	+49 30	23:20	23:21	03 00W	+49 45	"	60-60
50445	HD 60179 (α Gem)	07 28.2	+32 06	23:38	23:41	00 50E	+31 50	"	60-60
50445F	Focus test			23:53			+31 50	Fe Ne Clear	120-??

Spectr. Temp. 24 F Dome Temp./Hum. 8.5C/71% Transparency Conditions Clear

Focus 396

Spectr. Temp. 30 F Dome Temp./Hum. 10C/78%

Shutter opened & fans turned on half an hour before first exposure

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
8000	V. poor	V= 7.2	A0	BC	G=5430 1200/50.8	BS	IIa-0e	1	Rai star	Had a lot of problem in focusing the star. The last bit of exp (8000) was very slow !! Seeing seemed better, but not by much	Slark
↖ Last 60 sec	comp.	given	a count	of 2233			IIa-0e				VL
20000	V. poor	V= -1.4	A0 II	BC	G=5430 1200/50.8	BS	IIa-0e	1		OK ⇒	S/Str
10350	"	V= 1.65	B7 III	"	"	"	"	1			OK
10500	"	V= 1.79	F5 Ib	"	"	"	"	1		blue out of focus ?	OK
10070	"	V= 2.0	A1 II	"	"	"	"	1		A few clouds. Observer called it a night !!	V S/wk
T= 30 F	Focus at 396			Fan was not turned on !							OK
120 sec	count = 5200 ,			60 sec count = 6222						When mask on stellar position, forgot to set T= 60 sec !!	

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Tues./Wed.

Date Jan. 10/11 1989 Observers Fds.-Yee

1.50, 0.20 8m 68s

Emulsion Batches:
IIa-0e. IIf. Jan. 3

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50446	HD 16908	02 37.5	+27 24	18:19	18:31	01 05 E	+27 34	FeNe Clear	60-60
50446 T	Spot calibration for 50446-57.			15 min @ 15V		D4 3900 D3 4300	D2 4870		
50447	HD 3360	00 31.4	+53 24	18:45	≈18:50			FeNe Clear	60-
	~~HD 11415~~	~~01 47.1~~	~~+63 06~~					~~FeNe Clear~~	
50448	HD 11415	01 47.1	+63 06	19:27	19:31	00 44 W	+63 30	FeNe Clear	60-60
50449	HD 20365	03 11.5	+49 48	19:40	19:52			FeNe Clear	60-60
50450	HD 20809	03 16.1	+48 48	20:06	20:19	00 02 W	+49 05	"	60-60
50451	HD 26326	04 04.7	-16 36	20:30	21:41	00 37 W	-16 30	"	60-60
50452	HD 34503	05 12.7	-06 54	21:50	21:55	00 16 E	-6 56	"	60-60
50453	HD 35468	05 19.7	+06 18	22:02	22:03	00 31 E	-6 15	"	60-60
50454	HD 36960	05 30.1	+6 04	22:10	22:18	00 11 E	-6 05	"	60-60
50455	HD 36959	05 30.1	-06 04	22:24	22:50	00 20 W	-6 05	"	60-60
50456	HD 42690	06 06.9	-06 30	22:58	23:15	00 10 W	-6 37	"	60-60
50457	HD 45546	06 23.0	-04 24	23:25	23:46	00 24 W	-4 51	"	60-60
50457 F	Focus test			00:57		00 00	+14 36	"	120-60

Spectr. Temp. 31F Dome Temp./Hum. -2C / 62% Transparency Conditions Clear - intermittent cloudiness

Focus 394 Fans turned on 10 min. before first exposure and left on all night.

Spectr. Temp. 32F Dome Temp./Hum. -2C / 73%

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12025	poor	V= 4.66	B3V	BC	G=5430 1200/50.8	BS	IIa-0e	1	Fds		fair
											"
12059	poor	V= 3.66	B2IV	"	"	"	"	"	"	Spectrograph controller bombed before last comp was fired! Had problems reloading the controller. Last comp. did not fire.	
		~~V= 3.38~~	~~B3III~~	—	—	—	—	—	—		
12060	poor	V= 3.38	B3III	BC	G=5430 1200/50.8	BS	IIa-Oe	1	Fds		comp v. wk
12097	good	V= 5.15	B3V	"	"	"	"	"	"	comparisons	"
12040	O.K.	V= 5.29	B5V	"	"	"	"	"	"	only 1"/slit	"
11940	O.K.	V= 5.35	B3V	"	"	"	"	"	"	cloudy	"
12019	O.K.	V= 3.60	B5III	"	"	"	"	"	"		"
12300	O.K.	V= 1.64	B2III	"	"	"	"	"	"		"
12020	good	V= 4.78	B0.5V	"	"	"	"	"	"		"
12050	good	V= 5.35	B3V	"	"	"	"	"	"		"
12033	O.K.	V= 5.05	B2V	"	"	"	"	"	"		"
9500	O.K.	V= 5.06	B2V	"	"	"	"	"	"	cloudy	"
T=32F Focus at 394											" discarded

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Wed./Thur.

Date Jan. 11/12 Observers Fds./Tee

Emulsion Batches:
1.58, 0.22 IIa-0e. 178. Jan. 3.
1.52, 0.21 IIa-0e* 178. Jan. 9.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50458	HD 36653	05° 28.2	+14 13	21:33	21:54	00 29 E	+14 12	FeNe Clear	60-60
50458T	Spot calibration for 50458-50460			15 min @ 15V		D4 3900 D3 4300	D2 4810		↑
50459	HD 36819	05 29.3	+23 58	22:01	22:18	00 03E	+23 57	FeNe Clear	60-60
50460	HD 48879	06 40.5	+67 30	22:30	22:44	00 57E	+67 30	"	60-60
50461	HD 39291	05 46.5	-07 32.7	22:55	23:15		-07 37	"	60-
50461T	Spot calibration for 50461-64	+66 65		15 min @ 15V		D4 3900 D3 4300	D2 4810		
50462	HD 22928	03 35.8	+47 28	23:25	23:42	03 09W	+47 40	FeNe Clear	60-60
50463	HD 32630	04 59.5	+41.1	23:50	00:05	02 04W	+41 08	"	60-60
50464	HD 35468	05 19.7	+06 18	00:13	00:17	02 02W	+6 15	"	

Spectr. Temp. 28F Dome Temp./Hum. -9°/83% Transparency Conditions Clear (Windy)

Focus 395

Spectr. Temp. 28F Dome Temp./Hum. -7°C/86%

Fans turned on 10 min. before first exposure and left on for the duration of the night.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12040	V. poor	V= 5.64	B3V	BC	G=5430 1200/50.8	BS	IIa-0e	1	Fds - STAR		OK
First 60 sec comp.		given	count=2100				IIa-0e				V2
12040	V. poor	V= 5.38	B3V	BC	G=5430 1200/50.8	BS	IIa-0e	" 1	Fds star		OK
12030	V. poor	V= 5.14	B4III	"	"	"	"	"	"		OK
1255	ext. poor	V= 5.35	B2II-V	"	"	"	IIa-0e*	"	"	Extremely poor seeing, impossible to focus the star. Terminate exp. due to poor seeing, Sent comp did not fire - would not fire it.	Junk
							IIa-0e*				V2
12013	ext. poor	V= 3.01	B5III	BC	G=5430 1200/50.8	BS	IIa-0e*	4	Fds star		OK
12007	"	V= 3.17	B3V	"	"	"	"	"	"		OK
12118	"	V= 1.64	B2III	"	"	"	"	"	"		OK

231 Fri./Sat. Speedometer test

Emulsion Batches: IIa-0e..IIF..Jan.9....

Date Jan.13/14..1989.... Observers ..KK-..Yee.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
30465	HD 6582 (μ Cas)	01 01.6	+54 26	19:38	20:21		+54 47	te Ne clear	60-60-60
[redacted]								"	"
Speedometer	Capella	4 10^s	integration	21:45					
"	Flat	3 $0^s.1$	"					Tung Clear	
"	Comparison	2^s, $1^s.5$						FeNe old source	

Spectr. Temp. 30F Dome Temp./Hum. -5C / 76% Transparency Conditions Clear - cloudy - clear

Focus 394

Shutter opened about 15 min. before first exposure.

Spectr. Temp. Dome Temp./Hum.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5036 – 5006	poor	V= 5.12	BSR$_P$	BC	G-543a 1200/50.8	BS	Ia-0e	1	Asn/Sp		ok
	poor									Spectrometer test	

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Sun./Mon.

Date Jan. 15/16 1989 Observers KK - Yee

Emulsion Batches:
IIa-0e IF Jan.9
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50466	HD 6582 (μ Cas)	01 01.6	+54 26	20:31	22:00	04 17W	+54 47	FeNe Clear	40-40-40
50467	HD 47105 (κ Gem)	06 31.9	+16 29	22:13	22:15	00 56E	+16 18	FeNe clear	60-60 220 220
50467F	Focus test			22:30			+16 18	"	120-

Spectr. Temp. 34 F ..... Dome Temp./Hum. -1.C. / 82% Transparency Conditions Semi-clear .....

Focus ....39.4.....

Spectr. Temp. 33F ..... Dome Temp./Hum. -3C / 84% ..

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5005 - 5112	V. poor	V= 5.12	65Ap	BC	6=5430 1200/50.8	BS	IIa-0e	1	Asm/SP	A few clouds, turning cloudier. Second half of exp. was very slow!	OK
10134	V. poor	1-9	A0V	"	"	"	"	"	"	Too hazy!	OK
4560 / 6000	T=33F Focus at 394									(Blue and much Red) Big slope center-Red	

Tues - Wed

Date Jan. 17/18/89 Observers TN

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1520	Flat field						ND 2.3	~~Tungsten~~ A 1/4	7200s
1522	Flat Field 3hrs			1901	2101		ND 2.3	Tung A-1/4	7200
1523	FeA Long Comp	(w/ shutter opens)		2247	2257		No ND	Clear FeA	600
1524	DARK	Shutter closed - most lights off							1800 ~~1600~~
1525	Plebne HD 23862	03 49 11.1 (2000)	+24 08 12	00 49	01 19	~05 00 W	+24 03	No Filter needed	1800
1526	FeA Long Comp	(1989.5)					No ND	FeA Clear	600
FM 130.TN	HD 90861	10 29.3	+28 38	01 37	(2nd half few)	0118 E	+28 34		INT x4
1527	HD 90861	"	"	01 40	02 10	0045 E	"		1800
1528	FeA Long			0211			"		600
FM00013I.TN	HD 90861	2nd Seeing test.		~0225		0032 E	"		Int x4
SP001529.SRV	[FLAT at End]								7200

		XFWHM	YFWHM
FM00013D.TN	Frame 1	2".432602	2".283886
	2	2".658217	2".013182
	3	2".571340	2".265472
	4	3".156464	2".238409

		XFWHM	YFWHM
FM00013I.TN	Frame 1	2".789765	2".539283
	2	2".700401	2".279720
	3	2".703794	2".523128
	4	2".718694	2".577401

Spectr. Temp. ..... Dome Temp./Hum. +30F / 80% Transparency Conditions ... Cloudy mostly ... 230
Focus ..... → very thin haze
Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pfg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3840				200 u Fiber B&C/RS	1200/482	BS	6560				
4 B 3400 165	Note empty			IB written - delete -			Just before →	IA		written Jan 17	
330 90								IB		" Jan 17	
~~300 90/25~~	~~OK~~									" "	
300 90/25	OK	V= 5.09	BBT pe	200 u Fiber BC/RS	1200/482	BS	656CA	IB	Rig request	semi cloudy (counts to ~~1200~~ 1800)	
330/90		"	"	"	"	"	"	IA	/ Counts to 6000 in clear at 5 hrs West		
31x31 pinh	OK	V= 7.2	KJ III	in "N" mode [Sky clear here; no wind]					Seeing Test	Noise "herringbone" on screen	
800 28	OK	"	"	200 u fiber Rc/RS	1200/482	BS	6560A	IA	shivel	Fans Turned on @ 01:45	
270 70								IA		getting quite cloudy	
31 x 31	OK			"N mode"	Fans left on for test				Seeing test	(Cloudy, uniformly) written	
3900 180								IA		(shutter on timer)	

Backed up on floppy 1a

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Fri - Sat Page #1

Date JAN 20/21. 1984.. Observers ..T.n./..Yee.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1530	FeA at Start						no ND	FeA Clear	600
1531	Pleione	2000 03 49.2	+24 08	20 18	20:48	00 45W	+24 02		1800
1532	FeA							FeA Clear	600
1533	HD 26162 (43 Tau)	1989.5 04 08.5	+19 35	21:02	21:32	01 08W	+19 31		1800
1534	FeA							"	400
1535	HD 51250	1989.5 06 55.7	−14 01.8	21:42	22:12	01 00E	−14 05		1800
1536	FeA							"	400
1537	HD 35317	1980 05 22.9	−00 53	22:27	23:27	01 48W	−00 57	"	3600
1538	FeA							"	400
FM000132.TN	HD 57263	2000 07 22.2	+39 00	23:40		00 05W	+38 57	Int x	4
1539	HD 90861	1989.5 10 29.3	+28 38	00:00	01:00	01 40E	+28 34		3600
1540	FeA							"	400
1541	HD 103095	1989.5 11 52.4	+37 47.7	01:12	01:42	02 26 E	+37 43		1800
1542	FeA							"	400
1543	HD 89449 #1	1989.5 10 19.2	+19 31.5	02 07	0237	00 05W	+19 28		1800

Spectr. Temp. ..... Dome Temp./Hum. 410°F / 83% Transparency Conditions .. Clear by 20 hrs

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

very Gusty from NW
Fans turned on @ 20 hrs

Exp. Mtr A	Exp. Mtr B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
280	73				BC/PCS				IB	Seeing so bad that focus is impossible		
300	15	v v v poor	V= 5.09	B8V$_p$	PCS	1200/4832	BS	6560	IB	Rg - pgm		
270	80				FM0001132.TN Frame 1	7°4107'33	6°55'1229		IA			
350	15	ext. poor	V= 5.50	K1III	"	2 6°1036'48	6°26'1224		IB	Std. vel.	Count as high as 430.	
270	70					3 6°629'734	8°.06'742		JB			
600	30	ext. poor	V= 5.05	K2III + BTR	"	4 7°.673'749	8°.23'1054		IB	Std. vel.	Count as high as 850.	
270	70								IB			
150	15	ext. poor	✓AR 6-11	G8	"	"	"	"	IB	Aim for it		
250	70											
47.47 pairs		ext. poor	6-4	K0III	11" mode 4 frames			Full moon ≈ 20° away		Seeing test	(NNW gusty)	
30	10	ext. poor	V= 7.2	K2III	"	"	"	"	JB	std. vel.	Fans were turned off @ 00 05. Count as high as 175.	
750	55								IB			
140	13	ext. poor	V= 6.45	G8Ip	"	"	"	"	IB	std vel	Impossible to focus!	
230	60								IB			
600	20	ext. poor	V= 4.79	F6III					IB	std vel	covers to 650	
											Dome T = -18°C	

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Emulsion Batches: .....

Date JAN. 20/21/89 Observers Yee/Tu .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1544	FeA			02 38			No ND	Fe A Clear	400
1545	HD89449 #2	10 19.2 (1989.5)	+19 31.5	02 46	03 16	00 41 W	+19 28		1800
1546	Fe A			03 19			No ND	"	400
1547	HD89449 #3	10 19.2 (1989.5)	+19 31.5	03 28	03 58	01 25 W	+19 28		1800
1548	FeA			04 01			No ND	Fe A Clear	400
1549.SRV	FLAT Long	on timer		04 17			ND 2.3	Tung A-1/4	7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Sl. Hazy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -2°C / 85% NW wind much lighter now

Exp. Mtr. A	Exp. Mtr. B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
230	70				RC/KS	1200/4862	BS	6560A	IB			
500	30	poor	V= 4.79	F6I6	"	"	"	"	IB	stivel	Candidate for Primary List	
220	60								IB			
500-700/25		est. poor	V= 4.79	F6I6	"	"	"	"	IB	rad. vel.		
220	60				"	"	"	"	IB			
3220	130				"	"	"	"	IB		written @ 17hrs next night.	
					Back up to end of this floppy.							

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Sat - Sun

Date Jan. 21/22/89 Observers T.N.

Emulsion Batches:

200μ Fiber Head

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1550	Long Flat			17 37 36	19 38		ND 23	June H=1/4	7200
SP001551	Long FeA						no ND	FeA Clear	600
FM000133.TN	HD 29587	1989.5 04 40.8	+42 06	20 23		0030 E	+42 02	Int ✗	4 Frame
SP001552	HD 29587	"	"	20 27	20 57	0004 W	+42 02		1800
FM000134.TN	"	"	"	20 57		00 05 W	+42 02	Int x4	4 Frame
1553	FeA Long			21 00					600
1554	BM Cuss	1986.3 00 53.9	+64 01	21 18	22 18	0515 W	+63 52	prob +64 06	3600
1555	FeA #1								300
1556	FeA #2			22 25					300
1557	HD 11395	2000 01 54.6	+68 09	22 43	23 43	0540 W	+68 12		3600
1558	FeA			23 55 →					300
FM000135.TN	HD 64958	2000 07 58.3	+43 59	00 11		00 04 W	+43 47		Int x4
	FLAT on Timer	FM000133.TN Frame	XFWHM YFWHM	00 22	FM000134.TN Frame	XFWHM YFWHM			7200
	probably deleted, (not in directory)	1	2".316253 2".031232			1 2".421427 1".733333			
		2	2".485657 1".778571			2 2".005367 1".821515			
		3	2".444044 1".866323			3 2".521947 1".850580			
		4	2".454262 1".917800			4 2".171557 1".592657			

Spectr. Temp. ..... Dome Temp./Hum. +16°F / 80% Transparency Conditions Cloudy - Clearing Fast 242

Focus ..... [Weather Radio Says SW winds to 35 km/hr, Temp Risky overnight] From west @ 2015

Spectr. Temp. ..... Dome Temp./Hum. +18°F / 183% 1st Opened Shutters @ 20:15 No Fans on

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3300 / 140				PCS/BC	1200/482	BS	6560Å Hα	IB			
250 / 84								IB			
31×31 pixels	OK	7.9	462	"N" mode	[illegible]		4 Frames		seeing test	Dome facing W SW ~~North~~ SSW breeze	
450 / 19	OK	"	"					IB	std vel	Fans turned on @ 20 30	
31×31 pixels	OK	"	"	"N" mode	camera level		4 Frames		seeing test	Dome West now SW breeze	
								IB		While setting Reversal 100 cnts in clear sky	
60 / 9	OK	7.9	Em Hα	FM000135.TN	Frame 1	XFinNM 2°752.675	YFinNM 2°239532	IB	Obs pgm	Reversal thin cloud	
					2	3°387.685	2°239241				
220 / 60					3	2°383.993	2°087246	IB		} Add for BM Class	
220 / 65					4	2°669.209	2°257954	IB		} [Use with HON345]	
160 / 6	50 50	5.5	AO					IB	Rc1 pgm	Reversal still [MUCH Rec PROBLEM]	
210 / 60				~~Many to work Hα 2 times~~				IB		Getting Gusty from SW (thin cloud here)	
31×31	OK	V 6.5	KellI	"P" mode pixels 41	200		4 Frames		seeing test	Light SW breeze	
3400 / 160								IB	Fans were on until closeup.		

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Sun - Mon Pg 1

Date Jan. 22/23/89 Observers T.J./K.K. Emulsion Batches:

Note SP001560.HKT written 05 34 pm (Flat?)

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1561	FeA Long								600
1562	FeA SHORT								300
FM000126.IN	HD 13013	02 08.6 1989	+44 27	1800		00 10E	+44°	Int x4	
1563	~~II Peg~~ WRONG star	OD 536	+28 26	1810	Halted		+28 26		~~1800~~
1564	FeA								30
	~~II Peg~~ WRONG again	23 1989			Halted 1847		+2840		~~1800~~
1566	II Peg	23 539	+2829	18 50	1920	03 20W	+2830		1800
	FeA								300
1569	Polaris "B"	01 226 1900	+88 46	1953	21:06	2447549.	568 -6.91	~~FeA~~ Clear	1800 +1800
	FeA								300
	— Newtonian	flat tilt	was slightly off	— moved to eliminate	light in				
	FeA							Fe/A clear	300
1572	POLARIS "B"	01 22.6	+88 46	2126	22:30		626 -6.92		+200 3600
	FeA							FeA clear	300
1574	HD 65583	07 59.9 1989.5	+29 15	2245	2315				

Spectr. Temp. ..... Dome Temp./Hum. 130°F / 63% Transparency Conditions ... Clear - v s/haze 2W

Focus ..... warm

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS/8C	1200/4852	RS	6560Å	1B			
300 75								1B			
4 flames	so so	640	G8III	"N'onde	Fiber Head	RS			seeing test	Light SW 20 yds	
460 23	OK			FM occ Bk IN Frame 1	X(mm) Y(mm) 4.12 5.04			1B	(+) Fld	Turret Turns On @ 1806	
				2	3.38 3.72			1B			
				3	3.35 3.72						
				4	3.17 3.69			1B		[Star to NW edge of finder fld when on TI Pkg]	
110 17								1B			
700 20	OK	275	K0					1B	Rci pgm		
090 75								1B			
60 10	OK	B=8.6	F		1200/4423		5200Å	1B	Asm Sp #1	Reversal [one bin crash at beginning]	
Ronan	B	—									
310 25											
8 17	improving Sky	8.6	F		1200/4423		5200Å	1B	Asm Sp		
270 20											
340 20	OK	1/2	dG7		1200/4423		5200Å	1B	Stdrd		

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#7

Date Jan 22/23/89 Observers HK/Tm/...Tm

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	FeA comparison							FeA clear	300
Fm 137.Tm	HD65583	07 59.9	+29 15	23 30		00 40 E	On fiber Head		Int 4
1576	HD65583	7 59.9 1989	+29 15	23:32	23:37				300
	FeA comparison	1989.5		23:				FeA clear	300
1578	HD 90861	10 29.3	+28 38	23:48	00 19	0217 E	+2834		1800
	FeA	1987		0019					300 ~~600~~
1580	HD95735	11 02.6	+36 10	00 35	01 35	0135E	+3558		3600
	FeA	1989.5		0136					
Fm000136.TM	HD90861	10 29.3	+28 38	0149		00 45 E	+2834	4 frames	Int 4
1582	HD90861	10 29.3	+28 38	01 50	02 50	00 22 W	"		3600
	FeA								300
Fm000139.TM	HD90861	10 29.3	+28 38	02 58		00 30 W	+2835		
	FeA Long								~~300~~ 600
1585	HD 90861	10 29.3	+28 38	0323	03 53	0116 W			1800
FM000140	~~FeA Long~~ "	"	"			0120W	+2835		Int 4

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Fine .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				RCS/EC	12a/4273	BS	5200Å			slight SW breeze	
4 frames 21:21	OK	V 7.0	KG7	77° middle			Dome T=+3/9F		seeing test	(Dome pointing SSW)	
300/20	fair	V 7.0	KG7	FM000137.TN Frame 1 XFWHM 3".36 YFWHM 3".10 2 3".18 2".76 3 3".34 3".12 4 3".46 ???? (out of limit)					std vcl	weak exposure test	
300 14	OK	7.2	K2 IIa					JA	stblvcl	Fans off @ 0005	
300 17								JB	"		
140 6	OK	V 7.6	IIIb	RCS/EC	12a/4273	BS	5200Å	JB	KK pgm	cnts to 180	
								JB			
31:31	OK			"middle			(Dome pointing S)		seeing test	Light SW breeze	
400 16	OK	V 7.2	K2 IIa	FM000138.TN Frame 1 XFWHM 4".03 YFWHM 2".79 2 3".14 3".21 3 3".38 2".76 4 4".01 3".54				IB	stblvcl	Fans on again @ 01 5".3	
300 21								JB			
Same parameters				FM000139.TN Frame 1 XFWHM 3".33 YFWHM 2".98 2 4".02 3".39 3 3".51 3".08 4 3".79 3".32	FM000140.TN Frame 1 XFWHM 3".26 YFWHM 3".15 2 3".13 2".93 3 2".91 2".94 4 3".07 3".36				seeing test	(Dome SW) very light SSW no wind	
								IB		Fans turned off @ 0305	
300 20	OK							IB	stblvcl		
3:<3	OK								seeing test	Dome no wind	

247 #3

Emulsion Batches: .....

Date . Jan. 22/23 1909 .. Observers .... Tn .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1586	FeA Long				0407				600
~~1587~~ 1588	JUNG Flat						ND 23 1a	Tung a=1/4	7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
250 12								18			
1700 80											

249 Mon-Tues Page 1 Alex Colvin

Emulsion Batches:

Date Jan. 23/24/89 Observers T.T. A.C.

* Note: Diffuser 2" IN: white light + T-hats OK of course

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1589	Flat						ND 2.3		3600
FM0001A1.TN	HD 13013	02 08.6	+44 27	18 09		00 00	+44 28 ?		1st x 4
1590/1591	FeA Long → Then a SHORT ONE						No ND	FeA Clear	600
1592	HD 224085 I Peg	23 53.6	+28 35	18 27	19 27	W	+28 31		300 3600
1593	FeA	1986.3							300
1594	BM Cass	00 53.9	+64 01	19 39	20 01 Halted	03 03 W	+63 58		3600
1595	FeA								300
1596	HD 11395	01 54.6	+68 09	20 14	21 14	W	Reversed +68 13		3600
1597	FeA	1986.3							300
1598	BM Cass	00 53.9	+64 01	21 27	22 28	05 30 W	Reversed +64 06		3600
1599	FeA	2000							
1600	* Pleione	03 49.2 1969.5	+24 08	22 43	23 03	03 13 W	Reversed +24 14		1200
FM 1602 TN	HD 65583	07 59.9	+29 15	23 20		00 44 E	+29 10	4 frames	1x4
SP001602	"	"	"	23 23	00 23	00 19 W	"		
FM0001A3.TN	"	"	"	00 23		00 20 W	"	4 frames	1st x 4

Spectr. Temp. ..... Dome Temp./Hum. +39°/58% Transparency Conditions. V.S.I hazy.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

11 Km from SW from (Weather Radio)
Light air From SW

Exp. Mtr. A * B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				PCS/BC	1200/4963	(fiber 200u) BS	6560A				
31×31	OK	6.4M	G8III	"N" mode					Seeing Test	Dome pointed SW	
								1B		Fans turned on @1835	
350 35	OK	7.5	K2e	(Counts to 700 at times)				1B	~~Obs~~ Rci pgm	Field corrected RA Reads 23 54 3??	
320 90					XFWHM YFWHM			IA			
				FM0001.TN From	1 2".14 2".50						
170 15	Fine	=9	Ha Em		2 2".46 2".93			1B	Obs pgm		
					3 2".78 2".27						
					4 2".55 2".54						
					XFWHM YFWHM						
400 24	Fine	7.5	A0	FM0001&2.TN From	1 1".73 1".85			1B	Rci pgm	Cirs to 650 noted	
					2 1".95 1".93						
300 69					3 1".94 1".59			1B			
					4 2".07 1".93						
					XFWHM YFWHM						
180 13	Fine	9	Ha Em	FM0001&3.TN From	1 2".20 1".93			1B	Obs pgm	sl cloudy	
					2 2".12 1".95						
					3 2".56 1".97						
		V			4 2".31 1".65			1B		some cloud	
(to 200)	OK	5.09	A8V pe	* (300s a FeA after)				1B	Rg pgm	Cloudy patchy	
31×31	Fine	V 7.0	G7	(only on farm haze)		Now wind at all		H=80%	seeing test	sl cloudy T=+34°	
400	Fine	"	"					1B	std bol	cirs to 680 Fans turned off @2335	
31×31	Fine	"	"	thicker haze		"N" mode			seeing tst	No Fans on Now wind Dome pointed SW	

281 #2

Emulsion Batches: .....

Date Jan. 23/24/89. Observers T.n..... .....

.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1603	FeA			00 26		Diffuser IN	16 ND	FeA clear	300
1604	FLAT Long exp end ~~on Timer~~			01 01		Diffuser IN	ND 2.3	Tung A=1/8	7200
1605	DARK			0305					7200

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 1337/855 Complete Cloud by 01 40 EST

Exp. Mtr. A B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
								1B			
1300 80								1B		WRITten	

Note. Flat signal up from last night. Presumably Diffuser has been "in" for this whole Run. I haven't checked or changed it. ≈ 4000
I've forgotten what an acceptable upper signal is OK or ideal for Flat.
I believe we should stay under 2 counts/sec/pixel. ∴ Signal of 4000 ≈ 1 1/2 sec/pixel
∴ would the ≈ 4000 count Flat with A=1/4 be OK? too
But Flat is not "Flat" & high signal points maybe >> 1 cnt/sec/pixel??

Emulsion Batches: .....

Date JAN 24/25/89 Observers Jn. / Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1606	FLAT 4650 cnts/sec			23 23	00 23			1 UNG A=1/8	3600
1607	FeA Long			00 32				FeA Clear	600
1608	FeA			01 01					300
Fm 144	HD 82582	09 34.3 (2000)	+46 54	01 10		00 19E	+46 53		Int x4
1609	HD 11395	01 54.6 (2000)	+68 09	01 37	02 38	08 47W	Reversed +68 12		3600
1610	FeA								300
1611	CH Cyg (HD 182917)	19 21.9	+50 02	02 53	03 53	07 30E	+50 07		3600
1612	FeA			03 54				FeA Clear	300
	HD 103095	11 52.4 (1989.5)	+37 48				+		Int x4
	↳ Could not do the seeing test due to extreme noise on CCD; could not see the star at all!								
	Flat at Ond							FeA A=1/4	7200

Spectr. Temp. ..... Dome Temp./Hum. -2C/76%. Transparency Conditions ..semi cloudy.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -6C/85% Wind @ 00hrs medium from NE

Fans turned on @ 00:00 Dome opened too

Exp. Mtr. A / B	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4650 210				RC1/BC	1200g/mm	BS	6560R	1R			
300 75								1B	written ⇒	Complete cloud again	
								1B			
31×31	poor	6.3		"N" mode (CCD slightly noisy)				1	Posted Dome NW	Slightly wind NNE haze - thin clouds	
100 6	poor	V= 7.5	A0	(CCD much more noisy as night progressed)					Rei star		
								1B		Fans turned off @ 03 45	
50 5	poor	7.4<V<8.1	M6					1B	TDO sym.	count gets higher as altitude of star increases.	
220 50								1B			
31×31	poor	V= 6.45	G8V$_p$	"N" mode						Very noisy CCD.	
										A few clouds.	
						X(mm)	Y(mm)				
				FN000194.TN	Frame 1	4.15	3.50				
					2	4.24	4.79				
4300 185					3	4.89	6.97				
					4	5.21	4.59				

255 Echelle Retican Flexure Tests

Emulsion Batches: .....

Date JAN. 26/27..... Observers T.n. SBL..... .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2	Flat	[Echellex from Fortran 302]							10 min
68/134	Flexure test 0	0 -01 HrL (gradually moved from 0-1 hr		1909			+20 00	ThA	1 min
~~200~~	2			19 11		0200W	"		1 min
~~266~~	3	02-03 hrs	Dome turned	1915		0300W	"		"
~~332~~	4	03-04 hrs	Dome not moved	1918		0400W	"		"
~~398~~	5	0405	Dome not moved	1921		0500W	"		"
~~464~~	05E	Moved Dome and telescope from 05W→05E				0500E	"		"
~~530~~	04E	Dome not moved		1930		0400E	"		"
596	03E	" " "		1933		0300E			
~~662~~	02E	" " "		1936		0200E			
~~728~~	01	Dome moved		1939		0100E			
~~794~~	Meridian 00	Dome moved more		1943		0000			
~~860~~	00	Dome moved extensively				0000	+30-+80°		
~~926~~	00	Dome not moved		1955			80→+60°		
992	00	" " "		1958			60°→40°		
1058	00	" " "		2001			40→20		

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					600	50μ	5870				
1547											
1575											
1577											
1282	moved in steps while done terminal										
1320											
1377											
1444											

257 #2

Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1124		moved from	20° → 0°	20 05		0 0	+00°		1/min
1190	Only Camera	Lock clamp slightly tight	~~tight~~	~~hold~~ (nothing moved)		0 0	+00°		"
1256		moved from meridian to 5 hrs East				0500E	00°		"
1322		Dome not moved				0400E	00°		"
1388		" "	"			0300	00		"
1454		" "	"			0200E	00		"
1520		" "	"	20 26		0100E	00°		"
1586		Dome moved extensively				0000	00		"
1652		Dome not moved		2035		0100W	00°		"
1718		" "	"	20 38		0200W	00°		"
1784		Dome moved		2042		0300W	00		"
1850		not moved		2045		0352W	00°		"
1916L	FLAT	at same position		2046		"	"		600sec

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

~~Exp. Mtr.~~ Counts	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1565										~~A84 Expo~~	
1604										1184 Expo after	
1552	Dome moved East										
1544											
1520											
1581											
1599										1176	
1614	C/seem looking									1224	
1586										1335	
1591										15	
1582											
1755										2037	
	Ret. DAT in FORTRAN 3.2										

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Date Jan. 27/28 1989 Observers Th.-Lee

1.74, 0.26 — 5m 69° — 4m 70° → +4445 "Film" Hypered (3+ 1.40, 0.14)

Emulsion/Batches:
IIIa-J.e. 1A7 Jan. 27 — 4415 film
098-e 02985 Jan. 27 — 2.21, 0.36
IIa-De. 1I8 Jan. 9 — IIa-De* 1I8 Jan. 13

2.96, 0.24 — 1.71, 0.25

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50468	Pleione (HD23862)	03 43.3	+23 49.9	18:47	19:47	00 10 W	+24 03	FeNe Clear	Diffuser out 90-90
50468 T	Spot calibration for 50468					15 min @ D4 3900	17.5V 15V 4300	15V 4870	
50469	Pleione	03 43.3	+23 49.9	19:54	20:07	00 30 W	Diffuser IN	FeNe Clear	6-6
50469 T	Spot calibration for 50469				15 min @	D3/15V 4810 Hα	D1/7V D2/7V 3450		
50470	Pleione	03 43.3	+23 49.9	20:12	20:48	01 11 W	Diffuser IN	FeNe Clear	20-20
50470 T	Spot calibration for 50470 +76				15 min @	D4 15V 4810 Reversed	15V Hα +68 00	7V 5450	
50471	HD 11395	01 46.9	+67 40	21:12	23 01	05 20 W	Diff OUT	FeNe Clear	60-60
50471 T	Spot calibration for 50471 +72				15 min @ 15V	D4 3900	D3 D2 4300 4810		
50471 F	Focus Test					0 0	Diffuser Out	FeNe Clear	200/120
50472	HD 87822	10 02.5	+32 06	01 36	02:55	00 59 W	~~Diff Out~~	FeNe Clear	40-40-40
50473	HD 101177	11 33.5	+45 40	03:08	04:57	01 33 W	+45 05	"	40-40-40
50473 T	Spot calibration for 50473 −75 (and for plates on Jan. 28/29. 50477-50479)				15 min @ 15V	D4 3900 D3 4300	D2 4810		
50474	Polaris (HD8890)	01 22.6	+88 46	05:16	05:20	Reversed 11 28 W	+89 18	FeNe Clear	80-80
50475	Polaris	"	"	05:27	05:31	Reversed 11 39 W	"	"	80-80
50476	Polaris	"	"	05:39	05:49	Reversed 11 57 W	"	"	20-20
								Diffuser IN	

Spectr. Temp. 36F Dome Temp./Hum. -1C/80% Transparency Conditions Clear -5/4x2g 260

Focus 393

Spectr. Temp. Dome Temp./Hum. -3C/90%

Exp. Mtr	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
B filter out 20145/2000	good	V= 5.09	B8Vpe	BC	G=5430 1200/50.8	BS	IIIa-Je	1	rG pgm	90-s comp. prism count 2837 Fans turned off @ 19:25	OK
							IIIa-Je.				"
B filter out 31944	OK	V= 5.09	B8Vpe	BC	G=4270 1200/40.5	BS	098e	1	rG pgm	6 secs FeNe = 1680 cnts Set 396 T=33F	exp. good
B filter out 100144	O.K	V= 5.09	B8Vpe	BC	G=4270 1200/40.5	BS	098e			(Backing Plate Broke) Emulsion side uncertain	"
							4415 film	1	rG pgm.	Focus = 396, T=33F	continuum sl. weak
B filter IN 7246/1950	O.K.	V≈ 7.0	A0	BC	G=5430 1200/50.8	BS	4415 film	Note	Hot exp started	prob has been set @ 70°F Hot String not held flat	
							IIa-0e	1	rG pgm	60 sec FeNe = 1800 cnts Focus = 394, T=33F	Slit ht
							IIa-0e			Cloud OUT	"
8000/11000				BC	1200/50.8	BS	IIa-0 ECO	1		Set 394 T=31F	Fogged
T276/6009	OK	V= 6.6	F5	BC	G=5238 830/40.2	BS	IIIa-0e	1	Botas pgm	Set 398 T=30F	Comp string Exp OK
6434/6401	O.K.	V= 6.90	F0	BC	830/40.2	BS	IIa-0e*	1	"	There is a companion to the main star. [Exp 5] Str-OK	Comp Str
[redacted]							IIa-0e*				"
9244	poor	V=1.93	F8 ~~F8~~	BC	G=5430 1200/50.8	BS	IIa-0e*	1	Asm-Sp(KK)	Focus=394 T=30F ? Focus or Flexure	Exp OK
9873	poor	"	"	"	"	"	"	"	"	Comp Focus 3K	Exp OK
B filter OUT 146821	poor	"	"	"	G=4270 1200/40.5	"	4415 film	"	"	Focus = 397 T=30F Backing Plate Broke on 1st exp	good
										~½ Old Scrap plate used as backing	

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Fri./Sat. Page 2

Date Jan. 27/28 1989 Observers Tu-Yee

Emulsion Batches:
IIa-0e* 178 Jan. 13
.....
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~50477~~	~~HD 103095~~	11 52.4 (1989.5)	+37 47.7	06 04	06 09		+	Fe Ne Clear	Diff. out 75-

Spectr. Temp. ..... Dome Temp./Hum. 42°F / 95% Transparency Conditions ... Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Fog coming in.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
132	poor	V= 6.45	GIIp	BC	G=5430 1200/508	BS	IIa-0e*	1	std. vel.	Focus = 395 T=30F Exposure terminated due to extreme slowness!	

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Sat./Sun.

Date Jan. 28/29 1989. Observers Th.-Yee

Emulsion Batches:
Ia-Oe 178 Jan. 13
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.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50477	Polaris HD 8890	01 22.6	+88 46	01:55	02 14	Reversal 08 27 W	+89 18	Fe Ne Clear	Diff. out 70-70
50478	HD 8890	"	"	02 20	02 32	Reversed 08 45 W	"	"	70-70
	Spot plate 50473T for 50477-50479								
50479	HD 89449	10 19.2 1989.5	+19 31.5	02 43	03 54	01 51 W	+19 26	Fe Ne Clear	70-70
50479F	Focus test	10 14.3 1900	+19 59 1900	03 59		01 51 W	+19 26	Fe Ne Clear	200-

Spectr. Temp. 40F Dome Temp./Hum. 3C/90% Transparency Conditions Hazy - cloudy

Focus 392

Spectr. Temp. 38F Dome Temp./Hum. 0C/90%

Exp. Mtr & Filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12036	poor	1.9	F8	BC	G=5430 1200/5000	BS	IIa-Oe	1	Asm-Sp (KK)	Feble	OK V Fine
12151	"	"	"	"	"	"	"	"	"		Fine
7200	V. poor	4.79	F6IV	"	"	"	"	"	std. vel.	Getting cloudier. Exp. terminated due to clouds	Sl wk
15751/6749			T=38 F	Forno	F=392	"	"	1		Blue end Blue center	mid OK

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Wed./Thur.

Date Feb. 1/2 1989 Observers KK - Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat								120
1	α Tau (Aldebaran)	04 35.3 (1989.5)	+16 29	20:08	≈20:20	00 17 W	+16 24	Th Ar	60-60-
2	α Tau	"	"	≈20:28	20:41	00 38 W	"		60
	Flat			≈20:47					500
	Flat			20:56					400
	Flat (on platform, after closing)								300
	Flat	"							

Spectr. Temp. ..... Dome Temp./Hum. -4C / 78% Transparency Conditions Semi-clear / clouds.....

Shutter opened @ 17:53

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle	600/0.4011	45μ					±250
25755/~~26222~~	6" per	V= 0.85	K5III	"	"	"				60 sec exp. = 3018 counts	753
20222	"	"	"	"	"	"				Cloudy.	698
2702											479
2266											973
1532											634
1698											710

267 Fri. / Sat.

Date Feb. 3/4 1989 Observers [redacted] Yee

Emulsion Batches: .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	~~Test (cloudy)~~								
	~~Test Comp~~							[redacted]	[redacted]
1615 SRV	Fe A			19:46	19:53			Fe A Clear	400

Spectr. Temp. ..... Dome Temp./Hum. -9C/78% Transparency Conditions Clear - clouds 268

Focus .....

Shutter opened @ 20:50

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
[redacted]				[redacted]	[redacted]	[redacted]		[redacted]			
[redacted]	[redacted]							[redacted]			
A B											
250 70				PCS/SC	1200/48.3	BS	6560 Å	IB		Before a seeing test was grabbed, it clouded over!	

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Tues-Wed

Date Feb. 7-8, 89 Observers T.N.-Yee

2.56, 0.16

Emulsion Batches:
IIIa-J-eG Jan. 27
IIa-0e Jan. 13
Diffuser Out

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
FM000145.TN	HD13013	02 08.6 (2000)	+44 27		18 27	01 17 W	+44 21	~~Fe/Fe~~ Clear	Int ~~3~~ X4
50480	Pleione	03 43.2 (1900)	+23 50	18 51	18 58	01 05 W	+24 03	Fe/Fe Clear	90-90
50480T	Spot Calib for 50480.				15 min @ D4	17.5V 3900	15V 4300	15V 4810	
50480F1	G8 focus test			22 45		0 0		Fe/Fe clear	300/150
50480F2	G12 focus test				22 55	0 0		"	300/150
50481	HD87822	10 02.5	+32 06	02 11	02 31	01 20 W	+31 35	"	30-50
	→ Use spot plate	50483T							

		XFWHM	YFWHM
FM000145.TN	Frame 1	3".56	3".41
	2	3".64	3".25
	3	~~3".76~~	~~3".80~~
	4	3".54	3".09

Spectr. Temp. +23°F Dome Temp./Hum. +20°F / 75% H Transparency Conditions ... Fine - cloudy

Focus ... 396

Spectr. Temp. ... 20°F ... Dome Temp./Hum. +6°F / 95%

Fans on and Dome opened @ 18hrs EST

Exp. Mtr. & Filter	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
31 x 31	5050	6.4	681 II	BC	G=5430 200/20.8	Moderate Wide	~~Hadeg~~	.	"N" mode seeing test	DOME Facing SSW Light SW breeze	
1680/2261	5050	5.0	881 type	"	"	BS	IIaD-eg	1	Rg pgm	Cloud by 19:45. Exp. terminated due to clouds	WK
							IIIaJ-eg				comp SL WK
1455/13200	Diffraction cone			BC	G=5430 200/50.8	BS	IIIaJ-eg	1		Set 396 T=21°F	Right on date SL Red
1160/1389	"	"		BC	G=6270 830/40.2	BS	IIIaJ-eg	1		Set 401 T=21°F	comp ok
1670	poor	6.6	F5	"	"	"	IIa-De	1	Bates pgm	F#No 30sec: 859 cts/s Exp. terminated due to clouds.	SL WK
	DO Spot for 50481, If concerned I will do one next night if it's not developed.										

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#1 Thurs-Fri Echelle Tests

Date ..Feb.9/10/89.. Observers ..J.B.L.-T.A..... Flexure Tests

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination Stamped	Comparison Type/Filter	Comparison Exp.
#1 2L	FLAT [Appended to Scratch File]			19 45		0700E	69 44	Tung Halide Th A	180
C	Comp	Carefully and		19 49		0700E	"		60sec
	Comp	steadily moved		1953		0600E	"	"	60sec
	"	from E to West		1955		0500E	"	"	"
	"	in 1hr Increments		1958		0400E	"	"	"
	"			2001		0300E	"	"	"
	"			2004		0200E	"	"	"
	"			2007		0100E	"	"	"
	"			2010	meridian	0000	"	"	"
	"	[Echelle horizontal @ 2045W]		2015		0100W	"	"	"
	"			2019		0200W	"	"	"
	"				West Limit	0258W	"	"	"
T94L	FLAT	(At same posn	As Comp before ~~as previous~~	2025	"	0258W	"	Tung Halide	180sec
860C	Comp	ONLY Dec	changed!	2032		0700E	"	"	60
926C	Comp.			2041		0700E	45 00	"	60
992C	"			2044		0600E			60

Spectr. Temp. ..... Dome Temp./Hum. -10°C/75% Transparency Conditions ... Starry .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

· Shutters closed and heater "Rail" turned OFF for tests.

Exp. Mtr. Echelle	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
60000				Echelle et Telesc	600, 5870	H=600 50u	(Height set @ .200 width set @ .280)		JBL tests	[Dewar top up @ 1942]	3124
9082											1724
8930				Note JBL kept separate records of these tests.							1702
8725			—	Reticon Heater was on for duration							1876
8471				und Temps stayed between				±[0.3°]/on meter.			1675
8155				.							1622
7813										Dome not turned	1638
7477										at all, but pointed	1692
6959										North west for	1685
6921										this set.	1781
6997											1765
6998											1817
59179											2909
8737											1739
9013									Dome turned to (N) before start		1792
9024											1747

273 #2

Emulsion Batches: .....

Date ..Feb 9/10/89.... Observers ..SBL-TM..... .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Comp (Continuation of E-W run)			20 47		0500E	+4500	Th A	60sec
	"			20 50		0400E	"		
				20 53		0300E	"		
				20 55		0200E	"		
				20 58		0100E	"		
				21 02		Meridian	"		
				21 06		0100W	"		
				21 08		0200W	"		
				21 12		0300W	"		
				21 16		0400W	"		
				21 19		0500 W	"		
				21 24	near Hor Limit	0550 W	"		
1850L	Flat			21 28		0530W	"	Tungsten Halide	
	GLONG started (Dark Slide IN)								
	2nd GLONG after top up			00 54					

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
8881				Echelle Reticon	600, 5876	600H 80μ			Flexure test Continued		1704
8659											1870
8555											1678
8594											1689
8674										T = -0.129	1690
8757							Before this exp dome moved from N → West pointing				1712
8794											1743
8918											1753
9621									"Clunk" heard while moving (From Echelle area)		1750
11159 ← (Note Exp meter difference)									From 03W → 04W @ ≈ 0345W		1718
11998 ←										+0.250	1734
12257											1757
58141											2864

. 275 Sun/Mon 1st Echelle Rot at Broken Cass in Sometime,

Emulsion Batches: .....

Date Feb 12/13 1989 Observers JBL, Tm .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat					0 0	0° approx	Tung Halide	3 min
	Comp							THA	1 min
	γ Gem	06 37.1 (1989.5)	+16 25	20 50	20 55				5 min
	Comp							THA	1 min
	γ GEM	Guided Left of slit (as seen on warm mon monitor) To MAX count rate		20 59	21 08				10 min
	Comp			21 10				THA	1 min
	γ GEM	Guided on Slit		21 15	21 25	00 06W			10 min
	BS 2484	06 44.7 (1989.5)	+12 54	21 42	21 56			THA	1 min
	BS2484	"	"	22 06	22 19	0053W		THA	1 min
L	Flat							Tung Halide	180
	HP GEM	07 34.0 (1989.5)	+31 55	22 45	Locked at but not Kept, Both stars on				
	1 UMA	08 58 (1989.5)	+48 05	23 11	23 27	00 14E	+48 02	THA	1 min
	BS 3579	08 59.9 (1989.5)	+41 50	23 36	00 08	0025W		THA	1 min
	HD84441	09 45.3 (1989.5)	+23 49	00 09	00 37	00 11W		THA	1 min
L	Flat (at same posn of star)			00 40				Tung Halide	180 sec

Spectr. Temp. ..... Dome Temp./Hum. 27°/72% Transparency Conditions ... Sudden Clearing ...

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 20°/85%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
4EK				Echelle Ref 1872	600/5870	50µ	λ 5870Å				2739
19731											
27116	? 5-6	1-9	A0 V						Hen Sp-Kf	Guided partly slit center and partly to maximize intensity on Exp meter	729
											1262
55,193										TV image good.	1149
9969											1281
17,314				Note - Point at which Exp meter signal is MAX is very dependent on star image focus, ??	Rotate to slit posn					TV image poor for next star	726
18734	OK	V= 3.36	F3 IV							Guided on ~~star~~ Exp meter to Right of slit.	148
28000	OK	"	"	Image looked OK on						Guided on slit	240
54061				Top up of dewar after				Flat		104 2638	~~1864~~
slit Spectra	difficult to see.									T = -0.191	
43583	OK	V= 3.15	A7 IV							T = -0.123	703
46266	OK	V* 3.97	F5 V	*(This magnitude is approaching TV limit for guiding)						T = +0.240	346
55155	OK	V= 3.98	G1						std vel	T = +0.080	1277
											2523
					Backed UP as FEB1289.DAT						

277 Tues - Wed

Date Feb. 14/15/89 Observers J.A./AK

Appendal Existing ROTOAT

Emulsion Batches:

Plate No.	Object	R.A. 1900 1985	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
266L	Tung halide Flat								180sec
337C								THA	60sec
398S	n TAU	03 46.9	+24 04	18 30	Cloudy 44 18 54	W	+23 59		
464C 530C									60sec
	B PER	03 07.5	+40 55	19 03	19 49				60sec 60sec
	Tung Halide	Flat							60S
	"								180S
	Comp after adjustments			20 08			On Moon	THA	60sec
	Tests G & GLOMG with trouble light source			20 32		0 0	Just above Platform		
							23		

Spectr. Temp. ..... Dome Temp./Hum. 0°C / 60% Transparency Conditions Cloudy in Pat 278

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
					600, 5870	H=550 50μ					
1244					.4018						
4600	ok	28N	87Tilt	Echelle 1872 Ref						Picket fence	980
1547											1275
2468	ok	V or 2.1V								Through cloud T=-0145	227
											151
					Cross to .4012						1943
1529											2014
Last/Sec (27 Calibrated)				Echelle 1872 Ref	600, 5870	H=550 50μ				T= +0.145 = 2226	

279

Wed./Thur. Pg. 1 Echelle noise test + obs. Emulsion Batches:

Date Feb. 15/16 1989 Observers Tm - Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
530S	Noise test #1	H.A.		19 02	19 06	00 00	Platform		
596S	Noise test #2	00 00 HA	at start	19 10	19 18	00 08W	-21 47		
662S	Noise test #3	00 08W	at start	1919	1925	00 15W	"		
728S	Noise test #4	00 16W	at start	1926	1932	00 22W	"		
794S	Noise test #5	00 24W	at start	1934	1941	00 31W	"		
860S	Noise test #6	00 32W	at start	1942	1948	00 38W	-22 00		
926S	Noise test #7	00 40W	at start	1950	1956	00 40W	-22 00		
992S	Noise test #8			1958	20 04				
	Topped dewar at this point (@ 20:14, T=+0.200)								
1058S	Noise test #9			20 17	21 30				
1124C	Comp	before 1st exp		21 46		00 W	+16 25	HA	60sec
1190S	HD 47105 (γ Gem)	06 37.1 1989.5	+16 25	21 55	22 18	01 07W			
1256C	Comp.			22 20	20 21				60
1322L	Tung halide flat			22 23					60
1388L	" " "			2226					120

Spectr. Temp. ..... Dome Temp./Hum. ~1°C / 78% Transparency Conditions Cloudy at 1st

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

2 "B's" were done before each exp.

Shutter Rel. heater turned off before tests

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
500 counts Only the generator was on.					T = +0.100		H=550 6559, 7135	1872 Ref	Echelle Ref tests		194
>10 counts [redacted] clock was on.					T = -0.225						193
320	clock + dec guide				T = -0.230					noise seen on TV monitor when using Dec set	199
300	clock + RA guide				T = -0.238					Same as above with RA set.	188
320	clock + focus				T = -0.143					Same as above with focus set.	209
305	clock + dome				T = +0.077						192
300	All off.				T = -0.082						186
305	All off, fans were turned on after start of exp.							T =	-0.231		190
3739	Fans were on for the duration of the exp.							T =	-0.149		2207
1471								T =	-0.217		1667
16350	poor	1.9	A0 III	Echelle Reticon	600/5870 H=550	50μ		1872 Ref.	Asm-Sp (KK)		1400
1520											1672
										T = +0.300	489
											1079

281

Wed./Thur. Pg. 2 Echelle obs.

Date Feb. 15/16 1989 Observers Th-Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1454C	Comp.			22 43					60
1520S	HD 58715 (β CMi)	07 27.2 (2000)	+8 17	22 48	23 38	01 38W	+8 12		
	~~i Hya A~~	~~08 58~~	~~+48 05~~						
1586C	Comp.								60
		Topped dewar @		00:00	T=+0.340				
1652S	Noise Test 10	All off (trouble light)		Stellar mode		0 0	platform		
1718S	Noise test 11	00 00 HA	at start	01 04	01 08	00 09W	-17 28		
1784S	Noise test 12	00 12 W	at start	01 11	01 17	00 18 W	"		
1850S	Noise test 13	00 20W	at start	01 19	01 25	00 26W	"		
1916S	Noise test 14	00 28W	at start	01 27	01 33	00 34W	"		
1982S	Noise test 15	00 36W	at start	01 35	01 41	00 42W	"		
2048S	Noise test 16	00 44W	at start	01 43	01 49	00 50 W	"		
2114S	Noise test 17	00 52W	at start	01 51	01 57	00 58W	"		
	RET.DAT	backed up as FEB1589.DAT							

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Clear ... Thin c. Cloud ... Amon

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -1C / 82%.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
											1629
8938	poor	✓ 2.84 ~~V 3.15~~	B7 V ~~A7 III~~	Echelle Reticon	600, 5870 H=550	50μ	5872	1872 Ref.	Fans turned off in the middle of the exp.	T=+0.337 Becoming hazier (more like thin clouds)	834
											1843
1 cnt in 3 sec	1000 counts			(End time 00:51)							582
300	Clock was on. So was the house light.						T=+0.360			Fans were not turned on.	145
450	Clock was on only.			"			T=+0.029			"	216
450	Clock + dec guide			"			T=+0.039		Noise was seen on TV monitor	"	204
450	Clock + RA guide			"			T=-0.173		"	"	206
450	Clock + fans			"			T=+0.261		"	"	210
450	Clock + dome			(with shutter heater on)	"		T=+0.367		Shutter heater was turned on.	"	203
450	Clock + dome			(with shutter heater off)	"		T=+0.360		Shutter heater was turned off.	Noise was seen on TV monitor when dome was turned	210

283 Thurs-Fri #1 Tests

Emulsion Batches: .....

Date Feb 16/17 1889 Observers JBL-Th .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	Flat (prompted)			17 39		0216 W	+13°	Tung Halide	180sec
68	Comp			17 52		0700E	+20°	Th A	60sec
134	"	Smoothly moved to 06E		17 55		0600E	"	"	60sec
200	"	" "	05E	17 18		0500 E			
266	"	" "	04E	18 01		0400E			
332	"	" "	03E	1804		0300E			
398	"	" "	02E	1808		0200E			
464	"	" "	01E	1812		0100E			
530	"	" "	00			0 0			
596	"	" "	01W	1817		0100W			
662	"	" "	02W	1820		0200W			
728	"	" "	03	1822		0300W			
794	"	" "	04	1825		0400W			
860C	"	" "	05	1827		0500W			
926L	Flat	at posn of Rigel						Tung Halide	180

Spectr. Temp. ..... Dome Temp./Hum. 20°F/67%H Transparency Conditions ... Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Note. X grating & Echelle tilt; Camera focus = same for previous nights of this Run.
X Grating tilt = 0.416 Camera focus = 0.315

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
≈ 5000				Echelle tilt = 1.840	600,5870	H = 500 45μ	5870Å			454 = .283 spike @ For Ryd 500μH = .315	1339
1364									Flexure test		1546
1371											1511
1373											1565
1389											1702
1388											1714
1384											1637
1384	Dome temp. increasing rapidly while settling HRL from 02E→01E										1513
1393											1584
1409											1507
1447											1691
1461											1561
1465											1512
1481											1468
≈4600											1186

285 #7

Emulsion Batches:

Date ... Feb 16/17 ... Observers J.B.L.-Tn.

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
992C	Comp before Rigel					E	-8 13		60 sec
10585	Rigel	05 17 (1989.5)	-8 13	1902	1909	E	-8 16	ThA	60 sec
11905	"	"	"	1915	1922	0018 E			60 sec
13885	α ORI	05 55 (2000)	+7 24	1937	1943			ThA	60 sec 60 sec
15200	C Comp before	Top up (1989.5) - Then after tube		Removed (15 86C after)				ThA	60 sec
	eta Tau	03 46.9	+24 07	2004	2118	W	+23 59	ThA	60
								ThA	60
L	FLAT	at eta Tau posn.		2124				Jung Hulide	180
	Comp before Sirius		(1989.5)					ThA	60
	Sirius	06 44.7	-16 42	2137	2138	0025W	-16 48		1 min
	Comp				2145			ThA	60 sec
2046L	Flat at Sirius posn before change Slit height								180 sec
2114L	Flat @ " " after change of Slit height								180 sec
	Comp with shorter Slit			2158	2158				90 sec
2246	SIRIUS	06 44.7	-16 42	2202	2204				
2312C	Comp at Sirius posn								90 sec

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
1347				Echelle 1.846	600, 5870	H=500 W=45μ	5870				
12427	poor	0.08	B8Ia							centered on slit	585
12275	poor		"							focus to max signal on slit reflon	953
12250		0.80	B2.5Ib								1143
12293	poor	2.87	B7III		* (note – Same star as other eight)			small	ticket fence again	Dome Temp = +10°F +0.438 in Dewar	965
										T = +6.093 in dewar	1169
											1247
12327	poor	1.46	A0							T = -0.130	816
1515										T = +0.060	1352
5300				1.840	600, 5870	H=50 W=45μ	5870			T = +0.410	1208
3000				"	"	H=300 W=45μ	"			H=300 → 0.235	1766
1453				"	"	"	"				1240
12258				"	"	"	"			T = -0.061	832
1399										T = +0.328	1391

287 #3 Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
			1989.5						
	γ Gem	06 37.1	+16 25	22 16	22 54	01 50 W	+16 20	Th A	90
								Th A	90
	α CMi A	07 38.8	+ 5 15	23 07.5	23 16	W	+	Th A	90
									90
	Flat before α CMi A		at γ Gem posn	22 58				Tung Halide	180 sec
2840L	Flat after	α CMi A			23 20				180 sec
2906L	" "	"	Repeat	23 25	~~23 25~~				180 sec
	Comp before	β CMi ~~A~~	at β CMi posn,						
		~~07 26.6~~	~~+8 19~~						
	Stated GLONG after 2 "Gs"		1st G had picked		Spence stuff				
Feb 17 tests									
S	Trouble Light, Prism OUT								
S	" "	Prism IN			18 32				

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions 286

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
12277	5050	V 1·9	ACV	Echelle Tilt 1·840	600, 5870	H: 300 W: 45μ	5870		Asym. Spikes	T = +0.450	822
12249		V 0·38	F5V								740
3400										T = -0·118 big Spike at RHS	829
3200										Picket fence eclipse + big RHS spike	804
3650										Picket equinox spike	914
M37		2·90	B8V				B cm;		Focusing on TV monitor		1321
	Backed Up @ FEB1689.DAT								(diskette missing? Pdr May 2, 1991)		
											439
24000											556

289 Fri./Sat.

IIaO Dev Feb 19 8 mins @ 68° By Yee including #50481 5"67 since new mirror

Date 17/18 Feb 1989. Observers Tn - Yee

Emulsion Batches:
IIa-Je. IAT. Jan. 37.....
IIaO-e. 118. Jan 13. 1.82, 0.30
.....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
FM000147.YEE	HD 25022	(2000.0) 04 00.1	+40 00	18:53		00 30W	+39 55		
50482	HD 23862 (Pleione)	(1900.0) 03 43.3	+23 49.9	19 17	20 48	02 34 W	+24 07	FeNe Clear	60-80-60
50482T	Spot calibration for 50482 -	(Replaced by 50489T. Plate 50482T was shattered!)			15 min @ D4	17.5V 15V 3900 4300	15V 4810		
50483	HD 11395	(1900.0) 01 46.9	+67 40	21 06	23 41	07 22 W	Reversed +68 13	FeNe Clear	30-30-30
50483T	Spot Cals for 50483 -88 + 50481				15min@15V	D4 D3 3900 4300	D2 4810		
50484	HD 8898° (Polaris)	(1900.0) 01 22.6	+88 46	00 02	00 05	07 40 W	Reversal +89 20	FeNe Clear	80-80
50485	HD 8898° (Polaris)		"	00 16	00 19	07 54 W	Reversed "	"	80-80
FM000148.YEE	HD 87822	(1900.0) 10 02.5	+32 06	00 49		00 17 W	+31 34		
FM000147.YEE	Fr.1 Fr.2 Fr.3 Fr.4 XFWHM 4"22 3"73 3"68 3"86 YFWHM 3"81 4"36 4"23 3"57	FM000148.YEE	Fr.1 Fr.2 Fr.3 Fr.4 XFWHM 3"44 3"42 3"27 3"20 YFWHM 4"59 3"13 2"92 3"43	FM000149.YEE	Fr.1 Fr.2 Fr.3 Fr.4 XFWHM 3"29 3"30 3"35 3"34 YFWHM 3"08 2"88 3"15 2"98	FM000150.YEE			
50486	HD 87822	(1900.0) 10 02.5	+32 06	00 56	02 52	02 20 W	+31 34	FeNe Clear	30-30-30
FM000149.YEE	HD 108100	(2000.0) 12 24.9	+42 51			00 20W	(2000) +42 51		
50487	HD 101177	(1900.0) 11 33.5	+45 40	03 18	05 30	03 27 W	+45 04	FeNe Clear	30-30-30
50488	HD 102870	(1989.5) 11 50.2	+01 49.5	05 41	05 53	03 40 W	+01 43	"	45-45
50488.F	G12 Focus test			06 01			+39°	"	70-50
FM000150.YEE	HD 144579	1989.5 16 04.6	+39 11	06 12		00 17E	+39-07		
FM000151.YEE	HD 144579	"	"	06 20		00 09E	"		

Spectr. Temp. 31F Dome Temp./Hum. -11C/69% Transparency Conditions Clear

Focus 40.1 [redacted] Shutter & fans opened @ 18:00

Spectr. Temp. 10F Dome Temp./Hum. -16C/74% V light NW breeze

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
31x31 pinds	poor [redacted]	V= 6.9	A0 V	BC	G=4270 830/40.2	150μ	4 frames	"N"	Dome Shutter West mode 31X31 pinds	Monitor Screen quite noisy. Fld frame on back of slit	
32K/10000	poor [redacted]	V= 5.09	B8 IIIpe	BC	G=4270 830/40.2	BS	IIIa-Je	1	rG pgm	Exp. meter did not work for the 1st 60-s comp. & first 6 min. stellar.	OK
					IIIaJ-e		Exp. meter = 100 in 20s.			Slit can be seen very clearly on the monitor (R=19800)	
2848/2301	V. poor	V= T.0	A0	BC	G=4270 830/40.2	BS	IIa0e	1	Rci pgm	some cloud ~~Focus=370, T=15F~~	OK
							IIa0e				
12094	poor	V= 1.9	F8	BC	G=5430 1200/50.8	BS	IIa-0e	1	Abn Sp - KK	Focus=390, T=15F	fine
12228	"	"	"	"	"	"	"	"	"		fine
31X31 pinds	poor	V= 6.60	F5	BC	G=4238 830/40.2	150μ	4 frames	"N" mode	(Dome turned SW	Light NW breeze Focus=404, T=13F 1) Dome Temp=15C	
		Fr.1 Fr.2 Fr.3 Fr.4 XFWHM 3".19 3".41 3".09 3".05 YFWHM 2".84 2".91 2".92 2".90					Count = 30	in 1 min ± ½ rate	to BS (Just a fast test)		
5004/5003	V.V. poor	V= 6.60	F5	BC	G=4238 830/40.2	BS	IIa-0e	1	Wat pgm	Fans turned off @ 02:17	OK
31X31 pinds	poor	V= 7.14	F2	BC	"	150μ	4 frames	"N" mode		Fans were off. Dome Facing West; NO breeze at all	
5000/5001	poor	V= 6.90	G0	"	"	BS	IIa-0e	1	Wat. pgm.	Fans turned on for 2nd half of exp. (@ 04:20)	OK
6000	V.V. poor	V= 3.61	F9 V	FH000151. YEE	"	XFWHM YFWHM Frame 1, 3".07 2".15, 2, 2".91 2".03	"	"	std. vel.		OK
3912/5283	V Diffuser out			"	"	3, 2".99 4 3".08	3".31 3".52	"	"	Focus = 404, T = 10F	Center 31 Rel
	V V POOR	V 6.66	G8	BC	"	150μ	4 frames	"N" mode	(Shutter facing WSW)	Fans were on.	
	"	"	"	"	"	"	4 frames	"N" mode	(Shutter facing W[redacted])	Fans were off.	

291

Fri./Sat.

Date 24/25 Feb. 1989 Observers Yee / KK

5m67° see next night's Emulsion Batches: IIaJ-e Jan. 27 2.59, 0.18

4m69° - 098-e 03985 Jan. 27 2.52, 0.41

1.59, 0.24 8m058° Mar Hg IIa-De. IIF Jan. 13 IIa-De* IIF Feb. 19

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50489	HD 23862 (Pleione)	(1900.0) 03 43.3	+23 49.9	20 00	20 47	03 00 W	+24 05	Fe Ne Clear	Diff. out 60-60-60
50489T	Spot calibration for 50489 + 50482 + 50497, 50498				15 min @ D4 17.5V 3900	15V 4300	15V 4810		
50490	HD 23862 (Pleione)	(1900.0) 03 43.3	+23 49.9	21 20	21 52	04 05 W	+24 05	Fe Ne Clear	4-4-4
50490T	Spot calibration for 50490				15 min @	D3/15V 4810	D1/7V Hα	D2/7V 5450	
50490F	G24 Focus test			22 05			+24 05	Fe Ne Clear	15-10
50491	HD 8890 (Polaris)	(1900.0) 01 22.6	+88 46	22 31	22 34	06 32 W	Reversed +89 15	Fe Ne Clear	80-80
50492	HD 8890 (Polaris)	(1900.0) 01 22.6	+88 46	22 51	22 53	06 51 W	Reversed +89 15	Fe Ne Clear	80-80
50493	HD 8890 (Polaris)	(1900.0) 01 22.6	+88 46	23 05.7	23 07.5	07 05 W	Reversed +89 15	Fe Ne Clear	80-80
50494	HD 87822	(1900.0) 10 02.5	+32 06	23 31.5	00 32	00 27 W	+31 38	Fe Ne Clear	30/30-30
50495	HD 87822	(1900.0) 10 02.5	+32 06	00 49	01 29	01 25 W	+31 38	Fe Ne Clear	30-30-30
50491T	Spot calibration for 50491, 50492				15 min @ 15V	D4 3900	D3 4300	D2 4810	
50496	HD 101177	(1900.0) 11 33.5	+45 40	01 47	02 43	01 07 W	+45 08	Fe Ne Clear	30-30-30
	Spot plate for the new batch of IIa-O was not done.								

Spectr. Temp. ...18.F..... Dome Temp./Hum. -12C/60%. Transparency Conditions ..Clear.....

Focus ....401.....

Shutter opened @ 18:20

Spectr. Temp. .....15F..... Dome Temp./Hum. -13C/63%..

Exp. Mtr. B-filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
15025/15045	good	V= 5.09	BiIIpe	BC	G=4270 830/40.2	BS	IIaJ-e	1	rG	T=18F, Focus=401 60S comp=1984	comp OK OK
							IIa-Je				
11000/9000	good	V= 5.09	BiIIpe	BC	G=3600 (4270) 830/34.2	BS	098-e	1	rG	T=16F, Focus=402	Comps Str Exp OK
							098-e				X
441/931					830/34.2		098-e			T=16F, Focus=402	comps VS1 blue
12088	good	V= 1.9	F8	BC	G=5430 1200/50.8	BS	IIa-0e	1	Atm Sp-KK	T=16F, Focus=398 Hartmann mask in stellar pos.	comp ok sl wk
12123	good	V= 1.9	F8	BC	G=5430 1200/50.8	BS	IIa-0e	1	Atm Sp-KK		comp OK OK
12060	good	V= 1.9	F8	BC	G=5430 1200/50.8	BS	IIa-0e*	1	Atm Sp-KK		comp OK OK
5083/5045	good ok	V= 6.00	F5	BC	G=4270 830/40.2	BS	IIa-0e*	1	Waterloo pgm.	The first 5 seconds of the last comp. was fired when the decker was in stellar pos.!! Re-do same last exp. was prob. ruined!	comp OK
4995/5104	"	"	"	"	"	"	IIa-0e*	"	"		OK
							IIa-0e				
5004/5005	good	V= 6.90	G0	BC	G=4270 830/40.2	BS	IIa-0e*	1	Waterloo pgm.		comp OK OK

298 Mon./Tues.

Date 27/28 Feb. 1989. Observers Ly-Yee

5m 67° clear of prev nites Emulsion Batches: IIIa-Je Jan.27

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50497	HD 23862 (Pleione)	(1900.0) 03 43.3	+23 49.9	21 54	22 41	05 06W	+24 06	FeNe Clear	Diff. ant 60-60
50498	HD 86360	(1900.0) 09 52.9	+12 55	23 01	02 11	02 29W	+12 27	FeNe Clear	60-60-60
	Spot plate 50489T for these two plates (see previous page).								

Spectr. Temp. 28 F Dome Temp./Hum. -9C / 82% Transparency Conditions Clear - Hazy 294

Focus 399

Shutter opened @ 21:17 Clouds in S & SW.

Spectr. Temp. 22 F Dome Temp./Hum. -10C / 91%

Exp. Mtr. B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
10295	poor	V = 5.09	B8Ep	BC	G=4270 8730/60.2	BS	IIIa-Je	1	r G	60-s comp. = 1611	comp's'wk Stwk
29946/30496	poor/ O.K.	V = 5.26	B9V	"	G=5430 1200/53.8	"	"	1	Ly-Bln	T=26F, Focus=395	comp's'wk OK
				~~BC~~	~~G=5430 1200/53.8~~	~~BS~~	~~IIIa-Oe~~	~~1~~		~~T=22F, Focus=396~~	

295 Wed – Thurs

Date MARCH 1/2/89. Observers Tm

Emulsion Batches: 098-e 02-985 JAN 27/89
IIa0-e 12.8 Feb 19/89
IIaJ-e

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
FM 152 TN	seeing test HD40722	06 02 9	+43 23	19 24		00 16 E	+43 22		Int x4
50499	HD 23862	03 43.2	+23 50	19 48	20 18	02 50 W	+24 06	FeNe clear	5-5
50499T	Spot Calib for 50499				15 min @	D3/5V 4810	D1/7V Hz	7V/D2 5450	
FM 153 TN	seeing test HD 52860	07 05.2	+47 46	20 31		00 11 E	+47 47		Int x4
50500	HD 84441	09 40.2	+24 14	2049 68C (Echelle exp)	21 05	02 17 E	+23 48	FeNe clear	45-45
	Echelle Flexure test #2 (during notary)			2113, 134S	#3 @ 2142, 200C	22:12, 266C	22:41. 332C	FAA	each 2 min
50501	HD 87822	10 02.5	+32 06	2113	2327	00 18 E	+31 39	FeNe clear	30-30-30
50501T	Spot Calib for 50500-503				15 min @	15V D4 3900	D3 4300	D2 4810	
FM 154 TN	HD 87822 seeing test			2330		00 15 E	+31 39		
50502	HD 8890	01 22.6	+8846	2352	2357	08 16 W	Reversed +89 15		60-60
50503	"	"	"	2359	00 06	0825 W	" 15		80-80
50503F	Focus test			00 22		01 36 W	+26		240-150
	CReticon Corp after move from Polaris			00 27	→00 24	" W	"		2 min

Spectr. Temp. +25°f ..... Dome Temp./Hum. +21°f / 72% Transparency Conditions ... Partly ... Clear / Mostly clear 296

Focus 3.98 ..... 6.16 .....

Spectr. Temp. +20°f ..... Dome Temp./Hum. +10°f / 85% Dome open/e 1940 No Fans at start. (15 kms/hr) medium west wind.

Exp Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
AC "N" mode 39×39 no Filter	poor	V= 6.5	KOIII	(monitor dark) (Box stable)		150μ				medium west wind (Dome west) Fans turned on @ 1932	
32000	poor	5.0	B8V	BC	G=4270 1200/405	BS	098-e	1	Rg pgm	Diffuser in 5sec/1050 counts	cirrus/wk Hz/str
							078-e			Fans on during test Dome west. Med W wind	✓
"N" mode 39×39 Filter	So so	V 6.34	B9	Monitor Quiet Box stable		150μ				Fans off @ 20:50 Dome T=+15°f	
8,100	So so 39°C	V: 2.98	G IIIb	BC (Echelle Ref. of Brahman CASS)	G=4270 830/402	BS H-600 45μ	IIa0e 600, 5870	1 T.11.1890;	Std'd X Grating .4016	Diffuse out T=23°f Set 401 T@ 23 20 = -0.042	OK 13898
+CrpC	23 1/4										
5030/5500	So so	V 6.60	F5	BC	G 830/402	BS	IIa0-e	1	Wet pgm	Diffuse OUT	OK
							IIa0-e				✓
"N" mode 39×39	So so	V 6.60	F5	monitor Quiet Box stable		150μ	(Dome SW)		slightly more windy from West	Fans still off T=20°f Set 397	
17000	poor	2	F	BC	1200/508	BS	IIa0-e	1	Asm Sp kk	on Polaris (23:51 Ret comp) 469C	OK
	"	"	"	"	"	"	"	"	"		OK
7520/-				"	"	"	IIIaJ	1	Set 397 T=+20°f Ret.	[IN 098 Exp Box]	end Wet pgm UK
~~7520~~/					"	"				Reticon T=-0.140	14268
				Reticon test backel typ as MAR0189.DAT							

Sun – Mon

Date MARCH 5/6/89 Observers ...T.A.....

Emulsion Batches:
Sm 68F dev. 13 Mar. Tec II aud-efg... ~~Jan 27~~
Dev March 3 Sm a 668 Tec II a-e... I 18 - Feb 19 Diff out

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50504	HD 23862	03 43.2	+23 50	19 55	20 38	0328 W	+2406	Fe Ne Clear	60-60
50504F1	Focus Test					0 0		"	200/100
F2	Focus Test	[to see how it matches	PH #1]		22 EST	0 0	-6° 32	"	
F3	"					0 0	"	"	
F4	"					0 0	"	"	
F5	"					0 0	"	"	
	Spot plate 50505 T for plate 50504 (see next page)								

Spectr. Temp. +25°F ..... Dome Temp./Hum +20°F / 80% Transparency Conditions hazy ... cloudy ... very cloudy

Focus ... 395 .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr. B & Wea	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3300	poor	5.0	Bstype	BC	G 5430 1200/5000	BS	IIIa-J	1	Rg pgm	Getting too cloudy 60 sec Fake = 1600 cts	weak
6260/9300				"	"	"	IIaO	1		big slope	Do not use
				"	"	"	"	5		blue slope	Blue end of Ca central Red
				"	"	"	"	2		T = 23° Se + 395	big slope
				"	"	"	"	4			OK
				"	"	"	"	3		fair slope	Center blue
				Eyeballing tests, I would say Pts 1, 5, 4 are pretty close to each other. Pts 5 and 4 may even have less slope than Pt 1						

299 Tues/Wed.

Date 7/8 Mar 1989 Observers Tn/Kee

5th 68F dev. 13 Mar. YEE

4me 68°f do Mar25 Tn

Dev MAR13 8min@68°f Tn

Emulsion Batches:
IIIa-Je [redacted] Mar. 2 2.75, 0.19
0.9[redacted]-e 02985 Jan. 27 2.10, 0.35
IIa-0e 118 Feb. 19 1.52, 0.22

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
~~Deleted the blank frame & renamed FM000156.TN~~ FM000155.TN	HD 40722	(2000.0) 06 02.9	+43 23	18 55		00 18 E	+43 22		Diffuser out
50505	PLEIONE HD 23862	(1900.0) 03 43.3	+23 49.9	19 04	20 41	03 38 W	+24 05	FeNe Clear	80-80
50505T	Spot Calib for 50505 (see below)				15 mins @ 04	17.5V 15V 3900 4300	15V ~~5035~~ 4810		
50506	HD 23862	"	"	20 51	21 21	04 18 W	+24 05	FeNe Clear	DIFF IN 6-6
50507	HD 87822	(1900.0) 10 02.5	+32 06	21 40	23 29	00 08 W	+31 38	FeNe Clear	Diff. OUT 30-30-30
FM000157.TN	" Seeing Test			23 36		00 14 W	+31 38		
FM000158.TN	HD 87822 Seeing test	(1900.0) 10 02.5	+32 06	23 42		00 20 W	+31 38		
50508	HD 101177	(1900.0) 11 33.5	+45 40	23 49	01 01	00 05 W	+45 08	FeNe Clear	30-30
50508F	Focus test			01 08		"	"	"	200/100
50505T	Spot calibration for [redacted] 50505 + 50504 + 50509 + 50516 + 17, 23-25					15 min @ D4	17.5V 15V 15V 3900 4300 4810		
50507T	Spot calibration for 50507, 50508 + 50510				15 min	@ 15V D4 3900	D3 D2 4300 4810		
~~50506T~~	~~Spot calibration for 50506~~								
						This was probably ega for 50 min. as the timer didn't work!			
50506T	Spot calibration for 50506 + 18				15 min @	D3/15V 4810	D1/7V D2/7V Ha 5440		

Spectr. Temp. 13F Dome Temp./Hum. -13C/60% Transparency Conditions .. Clear - cloudy

Focus 400

Spectr. Temp. +9.5°F Dome Temp./Hum. -17C/65% (NE 15 kms/hr wind from News) Fans on and Dome opened @ 18:10

Exp. Mtr. & filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
31×31 pixels	5050	V= 6.5	K0III			150μ	4 frames	"N" mode (1 blank) Integrator x 4		Dome faced WSW Light NE breeze FeNe	
18307/18040	50 50 to O.K.	V= 5.09	BPVpe	BC	G=5430 1200/50.8	BS	IIIaJ-eg	1	Rg pgm	80Å = 2553 m/s	O.K.
Note	1 step	of 39008	OK,	But	Dark	Slide	IIIa-J	staged in	when	attempting to start Dwarfs - No Spots tonight	
no filter 41440	V. poor	V= 5.09	BPVpe	BC	G=4270 1200/50.5	BS	098-e	1	Rg pgm	T= +12°F Set 402	OK
B filter 5250/5217	V. poor	V= 6.00	F5	BC	G=4238 [illegible]/40.2	BS	IIa-0e	1	Wht. pgm	T= 10F Set 402	O.K.
31×31		"	"		Box slit 4 d/b1	150μ	4 frames "N" mode		Integrator X 0		
31×31 pixel		"	"		Slight turn 600 d/b1	150μ	4 frames "N" mode		Integrator X4	Moderate ENE breeze Dome SW facing	
4450/e-dot	V.V. poor	V= 6.90	G0	BC	G=4238 [illegible]/40.2	BS	IIa-0e	1	Wht. pgm.	Fans turned off @ 23:54 Exp. terminated due to clouds.	O.K.
				"	"	BS	IIIaJ-e	1		T = +9.5°F Set 402	
							IIIaJ-e			Exp. on 12 Mar. (Sun.)	
							IIa0-e			Exp. on 12 Mar. (Sun.)	
							098-e			Exp. on 12 Mar. (Sun.)	✓

Wed./Thur.

Date 8/9 Mar. 1989 Observers Tm./Tee

Emulsion Batches:
5"68F dev. 13 Mar. Tee IIIa-Je. 1A7. Mar. 2 } 1,55,0.22 Rodinal 8 mins @ 68°F
IIa-De. 1I8. Feb. 19 }
SPOT Sensitometer not available IIa-De. 1I8. Mar. 6

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
FM000159.TN	HD 40722 Seeing test	06 02.9 (2000.0)	+43 23	19 00		00 11E	+43 22	Diffract FeNe clear	
50509	HD 23862	03 43.3 1900	+23 50	19 09	19 50	02 51W	+2406		80-80
FM000160.TN	HD 87822 Seeing test	10 02.5 (1900.0)	+32 06	22 57		00 21E	+31 39		
50510	HD 87822	10 02.5 (1900.0)	+32 06	23 04	00 04	00 47W	+31 39	FeNe Clear	30-30-30
50511	HD 101177	11 33.5 (1900.0)	+45 40	00 13	01 55	01 06W	+45 08	FeNe Clear	30-30-30
50512	HD 8890 (Polaris)	01 22.6 (1900.0)	+88 46	02 13	02 17	11 02W	Reversed +89 15	FeNe Clear	80-80
50513	HD 8890 (Polaris)	01 22.6 (1900.0)	+88 46	02 23	02 37	11 22W	Reversed +89 15	FeNe Clear	80-80
50514	α Boo HD124897 HD ~~1497~~	14 11.1	+19 42	02 49	02 50	00 33E	+1914	FeNe Clear	80-80
50514F	Focus test	near α Boo (Dricon)		02 56	03 02	00 21E	"	FeNe Clear	240/120
50515	HD 122742	13 58.6 (1900.0)	+11 16	04 01	05 21	02 09W	+10 49	FeNe Clear	60-60-60
50516	HD 159561 (α Oph)	17 30.3 (1900.0)	+12 38	05 33	05 37	01 07E	+12 33	FeNe Clear	120-120
FM000161.TN	HD 153399	16 56.6 1900	+43 40	05 52		00 15E	+43 41		
50511T	Spot calibration for 50511 - 15, 19-22				15 min @ 15V	D4 3900	D3 4300	D2 4810	
	Spot plate 50505T for plates 50509, 16 (see previous page).								
	Spot plate 50507T for plate 50510 (see previous page).								

Spectr. Temp. 20F Dome Temp./Hum. -6C/71% Transparency Conditions. Clear - cloudy - clear
Focus 400 - 397 Shutter opened & focus turned on @ 18:25
Spectr. Temp. ____ Dome Temp./Hum. -10C / 90% Shutter opened again @ 22:48, focus were not turned on.

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
31×31 pixels B filter	OK	V= 6.5	K0 III			150μ	4 frames Integrator X4	"N" mode		Dome faced W. Light, steady E. breeze	
23900	OK	V= 6.09	B8 Ve	BC	G=4238 830/402	BS	IIIa-eEy	1	Rg pgm	clearing in from East	O.K.
31×31 pixels		V= 6.60	F5			150μ	4 frames Integrator	"N" mode	X4	Temp. = -8C, Humidity = 81% Dome faced SW.	
5001/5073	O.K.	V= 6.60	F5	BC	G=4238 830/40.2	BS	IIa-Oe	1	Wat. pgm.	T=21F, Focus = 400	O.K.
4999/4998	O.K.	V= 6.90	G0	"	"	"	IIa-Oe*	1	Wat. pgm.	f=No 30sec = 952 cnts	O.K.
10093	O.K.	V= 1.9	F8	BC	G=5430 1200/50.8	BS	IIa-Oe*	1	Asm Sp - KK	T=19F, Focus = 397	O.K.
9992	O.K.	V= 1.9	F8	BC	G=5430 1200/50.8	BS	IIa-Oe*	1	Asm Sp - KK	Cloudo.	O.K.
10,500	OK	1.19	K2 IIIp	BC	G=5430 1200/50.8	BS	IIa-Oe*	1	std. vel.	cloud	O.K.
6172/9417				BC	G=5430 1200/50.8	BS	IIIa-Je	1		Sel 397 T=18F	
4531/4534	poor	V= 6.21	B8 V	BC	G=5430 1200/50.8	BS	IIa-Oe*	1	Asm Sp - KK	Center hazy.	O.K.
34742	poor	B= 2.2	A5 III	BC	G=5430 1200/50.8	BS	IIIa-Je	1	"		O.K.
31×31		7.6	G5 IV	"		150μ	4 frames Double Focus	"N" mode	Integrator X4	Dome facing West	
							IIaO-e*			Exp. on 12 Mar. (Sun.)	

303 Thurs Fri Echelle Reticon tests.

Date 9/10 Mar 89 Observers JBL/Tm

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Tests of effects of Dewar Topping			1940	20.				
	" " Weights added			After going E 1hr →		Then left at meridian 0 0	+52 56		
	Beta								
860S	B GEm	07 44.7	1989.5 +28 03	2103	2118		00 08W	Th A	1476 10sec
926C	Possible movement of Echelle "Vibration" when adjusting CCD camera focus.								
1058S	B GEm	Restart of Flexure tests.		2152	2205		W		
	Th A			2206					10sec
1190S	B GEm	07 44.7	1989.5 +28 03	2207	2220				
	Th A								
1322S	B Gem			2225	2236				
	Th A								
1454S	B Gem			2240		+ Th A end.			
1586L	Flat with slit widened			2335					900
1652L	Flat with slit narrowed			2356					800

Spectr. Temp. ..... Dome Temp./Hum. 76°/H=60% Transparency Conditions ... Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				X grating 0.406		H=6.5μ = .300 in micrometer 45μ.				echelle Tilt 1.840	
1 stone	no weight, 2nd 1 8" dia wt,									JBL keeping notes.	
14140		V= 1.14	Known				std Vel			1446 only for ThA comps	2239
10710					Note	JBL kept the detailed notes:					4316
73											1495
11567											4575
83											1476
12557											3311
											1389
						slit set to .015 for Flat					5777
						slit set to .200					3563
										not backed up? (Pdr May 2/3 91)	

305 Fri./Sat. Page 1 Echelle Return obs.

Date 10/11 Mar. 1989 Observers Eds.-Tn/Yee

Emulsion Batches: .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
68 S	Comp. (white topping up)								20
134 S	Comp.			18 56					20
200 S	Sirius	(1900.0) 06 40.8	−16 35	19 21	19 50				
266 C	Comp.			19 51					20
332 S	Sirius	(1900.0) 06 40.8	−16 35	19 52	19 56		−16 36		
398 C	Comp.			19 57					20
464 C	Comp.			20 00					20
530 S	γ Ori	(1989.5) 05 24.6	+06 20.5	20 01	20 14	01 46 W	+06 19		
596 C	Comp.			20 15					20
662 S	γ Ori	(1989.5) 05 24.6	+06 20.5	20 16	20 24	01 56 W	+06 19		
728 C	Comp.			20 25					20
794 S	γ Ori	(1989.5) 05 24.6	+06 20.5	20 26	20 45	02 17 W	+06 19		
860 C	Comp.			20 45					20
926 S	Flat			21 03					
992 S	Flat			21 05	21 07				
1058 S	Flat			21 07					

Spectr. Temp. ..... Dome Temp./Hum. -3°C./70%. Transparency Conditions Some clouds - cloudy.....

Focus .....

Shutter opened @ 17:35
Fans stopped on @ 18:30

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Coarse grating tilt setting 0.5202 Echelle tilt setting = 1.840 ↑ (actual reading = 1.844)				H = 4 m/m (= 0.225 setting)	80 μ (= 0.269 setting)			T exposures from 0.130 → +0.225		
22							4480 Å			Beam to the right when star is down slit.	3178
	poor	V= -1.46	A1 V							T = -0.031 In & out of clouds.	2949
19											3353
8638	poor	V= -1.46	A1 V							[redacted]	2229
20											3321
											3471
8493	O.K.	V= 1.64	B2 III								2424
119	[redacted]										3527
9019	O.K.	V= 1.64	B2 III								2592
161	[redacted]										3366
3049	O.K./ poor	V= 1.64	B2 III							Clouds.	931
191											3681
											1404
8500											2301
8500											2363

Fri./Sat.

Date 10/11 Mar. 1989. Observers Eds. – Tm/Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1124 S	Flat								
1190 S	Flat								
1256 S	Flat								
1322 S	Flat								
1388 S	Flat								
1454 S	Flat								
1520 S	Flat								
1586 S	"								
1652 S	"								
1718 S	"								

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Cloudy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
8500											2390
8500											2393
10000											2826
10000											2892
10000											2876
10000											2886
3500											1093
"											980
"											971
"											985

309 Sun./Mon.

Date 12/13 Mar. 1989 Observers Tn/Yee

Emulsion Batches:
5th 68F dev. 13 Mar. YEE IIaJ-e.147 Mar.2
4min Dev MAR24@68F Tn 098-e.02985 Jan.27
Dev MAR13 8mins@68F Tn IIaJ-e.178 Mar.6

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
FM000162.TN	HD 40722 Seeing test	06 02.9 (2000.0)	+43 23	18 59		00 03 W	+43 22		Diff. 007
50517	HD 23862 (Pleione)	03 43.2 (1900)	+23 50	19 07	20 46	04 02W	+24 06	FeNe Clear	80-80-80
50518	HD 23862 (Pleione)	03 43.2 (1900.0)	+23 50	20 54	21 28	04 44 W	+24 06	FeNe Clear	Diff. IN 6-6
50519	HD 87822	10 02.5 (1900.0)	+32 06	21 38	23 52	00 50 W	+31 39	FeNe Clear	Diff. OUT 30-30
FM000163.TN	" Seeing Test			23 58		00 55 W	"		
50520	HD 101177	11 33.5 (1900.0)	+45 40	00 03	02 28	01 57 W	+45 09	FeNe Clear	30-30-30
FM000164.YEE	HD 120245	13 47.5 (2000.0)	+37 53	0242		00 02W	+37 55		
50521	HD 8890 (Polaris)	01 22.6 (1900.0)	+88 46	02 57	03 01		Reversed +89 15	FeNe Clear	80-80
50522	HD 8890 (Polaris)	01 22.6 (1900.0)	+88 46	03 07	03 13	13 13W	Reversed +89 15	FeNe Clear	80-80
50523	HD137909	15 23.7 (1900.0)	+29 27	0325	0355	0027E	+29 07	"	80-80-80
50524	HD124897	14 11.1	+19 42	0406	0402	0059 W	+	"	120-120
50525	HD 159561 (α Oph)	17 30.3 (1900.0)	+12 38	04 22	04 30	02 03E	+12 33	FeNe Clear	120-120
FM000165.YEE	HD 144579 Seeing test	16 04.6 (1989.5)	+39 11	04 46		00 13E	+39 09		

Spot plate 50511T for plates 50519-22.
Spot plate 50505T for plates 50517, 23-25
Spot plate 50506T for plate 50518

Spectr. Temp. 29 F Dome Temp./Hum. −6 C / 61% Transparency Conditions Clear – a few clouds

Focus 395

Spectr. Temp. 19 °F Dome Temp./Hum. −9 C / 74%

Shutter opened @ 17:53
Fans turned on @ 18:10
Fans turned off @ 01:30

Aurora borealis visible: mainly red & green.

Exp. Mtr B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
39 X 39 pixels	ON to poor	V= 6.5	K0III			150μ	4 frames Integrator	"N" mode X4		"Box" showed double vertical frame. Dome faced W, light N breeze.	
5005/5002	O.K.	V= 5.09	B8V pe	BC	G=5430 1200/508	BS	IIIaJ-e	1	rG		Comp. O.K. slightly weak
V8 filter 30017	poor	V= 5.09	B8V pe	BC	G=4270 1200/402.5	BS	098-e	1	rG	T=25F, Focus=398	O.K.
B filter 5007/5005	ord. poor	V= 6.60	F5	BC	G=4238 830/402	BS	IIaO-e	1	Wat. pgm	T=25°F Focus=398	O.K.
39×39		V= 6.70	G0			150μ	4 frames Integrator	"N" mode X4		Doubled "box". Dome faced W.	
4998/5002	ext. poor	V= 0.90	G0	BC	G=4238 830/402	BS	IIaO-e	1	Wat. pgm.	Very intense auroral display tonight, absolutely spectacular!!!	O.K.
31 X 31		V= 6.95	K2III			150μ	4 frames Integrator	"N" mode X4		Dome faced W. Calm.	
10117	poor	V= 1.9	F8	BC	G=5430 1200/508	BS	IIaO-e	1	Atm Sp - KK	T=20F, Focus=398	O.K.
10192	poor	V= 1.9	F8	BC	G=5430 1200/508	BS	IIaO-e	1	Atm Sp - KK	Aurora still very bright	O.K.
17959/18000	OK	395	F0p	"	"	"	IIIaJ-e	1	Atm Sp-KK	SEQ 2210 80 cm = 2500 cm	O.K.
31003		1.19	K2Vp	"	"	"	IIIaJ-e	1	Std vel	Some clad	O.K.
35158	poor	B= 2.2	A5III	BC	G=5430 1200/508	BS	IIIaJ-e	1	Atm Sp-KK	Clouds to the south	O.K.
~~31×31~~	OK	V= 6.66	dG8			150μ	4 frames "N" mode Integrator X4			Slightly hazy here	

311

Sat./Sun.

Date 18/19 Mar. 1989 Observers Yee - Bt

5" 60° Dev 8 min. 0667 MAR 25 Tm

Emulsion Batches:
IIIaJ-e 147. Mar. 2 2.80, 0.20
IIaD-e 178. Mar 6 1.48, 0.20

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp.
50526	HD 23862 (Pleione)	(1900.0) 03 43.2	+23 50	19 47.5	21 21	05 01W	+24 05	FeNe Clear	80-80-80
50526T	Spot calibration for 50526, 27, 31, +33				15 min @ D4 17.5V 3900		15V 4300 15V 4810		
	~~HD 86360~~							~~FeNe Clear~~	~~80~~
50527	HD 47105 (γ Gem)	(1900.0) 06 31.9	+16 29	21 57.5	22 02.5	02 55W	+16 24	FeNe Clear	120 80-120
50528	HD 8890 (Polaris)	(1900.0) 01 22.6	+88 46	22 43.5	22 46.5	08 12W	Reversed +89 15	FeNe Clear	80-80
50529	HD 8890 (Polaris)	(1900.0) 01 22.6	+88 46	23 04.2	23 10	08 37W	Reversed +89 15	FeNe Clear	80-80
50530	HD ~~86360~~ 102870	(1989.5) 11 50.2	+01 49	23 48.5	00 01	00 17E	+01 48	FeNe Clear	80-80
50528T	Spot calibration for 50528, 29 +32				15 min @ 15V		D4 D3 D2 3900 4300 4810		
50531	HD 86360	(1900.0) 09 52.9	+12 55	00 25	01 43	03 15W	+12 24	FeNe Clear	80-80
	HD 102870	1900 11 45 29	+02 20						

Spectr. Temp. 30F Dome Temp./Hum. 6C / 59% Transparency Conditions Clear - a few clouds - cloudy 3/2

Focus 395 Shutter opened @ 19:19

Spectr. Temp. 23F Dome Temp./Hum. 8C / Wind from W.

Exp. Mtr B filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
15013/11997	O.K. ~~poor~~	V= 5.09	B8Vpe	BC	G=5430 1200/50.8	BS	IIIaJ-e	1	rG	50-S Comp. = 2133	comp s/wk S/wk
							IIIaJ-e				"
		~~V= 5.26~~	~~B9III~~	~~BC~~	~~G=5430 1200/50.8~~	~~BS~~					
35126	good	B= 1.9	A0IV	BC	G=5430 1200/50.8	BS	IIIaJ-e	1	KK	T=24F, Focus=395 Star lost to the Horn → wrong star!!! Plate was discarded, new exp. required	* OK
10004	O.K.	B= 1.9	F8	BC	G=5430 1200/50.8	BS	IIaO-e	1	Abs Sp - KK		OK
10026	O.K.	B= 1.9	F8	BC	G=5430 1200/50.8	BS	IIaO-e	1	Abs Sp - KK		OK
10008	O.K./ poor	V= 3.61	F9V	BC	G=5430 1200/50.8	BS	~~IIIaJ-e~~ IIaO-e	1	std. vel.	T=26F, Focus=395 A few clouds. / "broken" OK	OK "
17020	V. poor	V= 5.26	B1III	BC	G=5430 1200/50.8	BS	IIIaJ-e	1	Ly	Thin clouds — thick clouds.	comp s/wk S/wk
									*ID Label poor. ∴ may be crossed with plate # 50533		

313

Sun./Mon.

Date 19/20 Mar. 1989 Observers Yee

Dec. Same 6.5° IIIaJ 7m

Emulsion Batches:

5" 68° IIaO-e. 178. Mar. 6

IIIaJ-e. 187. Mar. 2

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50532	HD 44990	(1900.0) 06 19.8	+07 08	19 47.5	21 15	02 24W	+07 04	FeNe Clear	80-80
	→ Probably set on wrong star. Sidereal time was 1 min. ahead, true R.A. reads 06 24.8								
50533	HD 47105 (γ Gem)	(1989.0) 06 37.0	+16 25	21 37.5	21 42	02 37W	+16 24	FeNe Clear	120-120
	Spot plate 50528T for plate 50532.					X 5 min error in HrL			
	Spot plate 50526T for plate 50533.								

Spectr. Temp. 30F Dome Temp./Hum. -5C/66% Transparency Conditions Clear - cloudy

Focus 395

Spectr. Temp. 28F Dome Temp./Hum. -6C/69%

Shutter opened @ 19:19
Fans turned on @ 20:20

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
3400	V.V. poor	≈6	F7Ia6	Bc	G=5910 1200/53.8	BS	IIaO-e	1	Ly	Bo-S comp. = 2237. Est. poor seeing, separable to focus	Comp s/wk S/wk
35190	poor	B= 1.9	A0III	Bc	G=5930 1200/53.8	BS	IIIaJ-e	1	KK		* Ok
									* maybe #50527 ? poor label ID		

Note on plate # 50532 Re "wrong star" Tn

(V mag 5.59-6.60; spectrum looks very late, many narrow lines.

∴ Both noted RA & Dec are correct within our pointing limitations.

If in doubt, a field should have been drawn & noted in Remarks.

Mag V = 5.98 b+ var

Sp Class from BS F7Ia6-KIIa6

(Proper motion +0.015"/yr +.004"S/yr)

V RA 1990 = 06h24m7s δ1950 +0705

Neg Sk

315 Tues./Wed. Page 1 Echelle obs.

Date 21/22 Mar. 1989 Observers Eds. - In/Yee

Emulsion Batches:
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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Comp.								20
	γ Ori	(1989.5) 05 24.6	+06 20.5	19 35	19 48	02W	+06 18		
	Comp.								20
	Comp.			19 53					20
	~~ε Per~~	(2000.0) ~~03 57~~	~~+40 00~~						
	Comp								20
	α Leo	10 07.8	+12 01	20 11	20 39	02 14	+12 01		
	Comp								
	Flats.				21 27		platform		
	Flat								
	Flat 1								
	Flat 2								
	Flat 3								
	Flat 4								
	Flat					21 36			

Spectr. Temp. ..... Dome Temp./Hum. ~5C / 60% Transparency Conditions Clear - cloudy .....

Focus .....

Shutter opened @ 18:15

Spectr. Temp. ..... Dome Temp./Hum. .....

Fans turned on @ approx. 19:10

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
	Comp. tilt setting =0.5202 Echelle tilt setting = 1.840				H=600p (=0.225 setting)	80μ (=0.269 setting)					3100
6025	poor	V= 1.64	B2 III				4480 Å				1522
197											3391
214											3296
~~6025~~		V= ~~2.14~~	~~B0.5 V~~								
~~6025~~ 6025											2993
~~6000~~ 6000?		V= 1.36	B7 V								2072
B									Note Tertiary Removed for Blu tow. Then put back in.	BLUE changed ~~tilt~~ =1 Post from Lens	2
6000											
40000									Fans turned off @ 21:15 EST		2500
30000											1876
30000											1867
30000											1861
29500											1772
41500											2605

317 Tues./Wed. Page 2

Date 21/22 Mar. 1989 Observers Fds - Tn/Yee

Emulsion Batches: .....

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Plate No.	Object	R.A. ~~1900~~	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Comp for α Leo	α Leo 2000		21 43		E +		ThA	
	HD 87901	~~α Leo~~ ~~HD87901~~	10 07.8 +12 58	21 48	21 58	00 27E	+12 01		
	Comp								20
	Comp								20
	HD 120315 (η UMa)	13 47.2 (1989.1)	+49 23.4	22 12	22 20	03 40 E	+49 20		.
	HD 120315 (η UMa)	13 47.2 (1989.1)	+49 23.4	22 21	22 55	03 05 E	+49 20		
	Comp								20
	Comp								20
	HD 87901 (α Leo)	10 07.8 (1989.1)	+12 01	23 07	23:20		+12 01		
	Comp								
	Comp								
	η UMa HD120315			23:30	23:57	0207 E			
	Comp								20
	Comp								20
	ζ Her HD147394	16 19.7 2000	+46 19	00 06	00 48	03 45E	+46 17		

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				X grating 0.5202 Echelle 1.890		H=100μ 90μ	4480Å				
8500		V= 1.36	B7V							T=-0.250	2234
68											3096
39	poor	[redacted]	[redacted]								2944
1090	poor	V= 1.26	B3V							cloudy	575
6151	poor	V= 1.14	B3V							"	2778
489											4355
523											4728
7000		V= 1.36	B7V							cloudy	2351
559											4772
544											4751
6000											2579
499											4510
473											4898
1000	5050 to poor	V= 3.89	B5III	note (This is magnitude limit of TV guider)						clear sky, * picket-fence pattern	556

Tues./Wed.

Date 21/22 Mar. 1989 Observers Fds - Tn/Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Comp.								15
	Comp.								15
	HD 120315 (η UMa)	13 47.2 (1989.1)	+49 23.4	01 03	01 19	00 47 E	+49 20		
	Comp								15
	Comp								15
	HD 87901 (α Leo)	10 07.8 (1989.1)	+12 01	01 31.5	01 41	03 15 W	+12 01		
	Comp.								15
	Comp.			01 51					15
	β Lib. (HD 135742)	15 17.0 ~~(1988.1)~~ (2000.0)	-09 23	01 55	02 350	00 59 E	–		
	Comp.								15
	Comp.								15
	η UMa (HD 120315)	13 47.2 (1989.1)	+49 23.4	02 43	02 55				
	Comp								~~15~~
	η UMa / HD 120315	13 47.2 (1989.1)	+49 23.4	02 58	03 10	105 W	+49 ~~21~~		
	Comp.								15

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
413											3525
423											3580
5977	poor	V= 1.86	B3V								1918
445											3381
523											3553
6007	poor	V= 1.36	B7V								1423
150											2551
166										Dewar topped before start of comp. T= +0.115	2507
4900	poor	V= 2.50	B8V							PICKET FENCE!!	1459
46											3182
30										(Lower finder) Remarks: First CROSS hair, center	2356
6073	poor	V= 1.86	B3V							Picket Fence !!	.
126											3242
6027	poor	V= 1.86	B3V							T= +0.135	1573
160											3159

321 Tues./Wed. Page 4

Date 21/22 Mar. 1989 Observers Fdo. - Tn./Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	comp								20 ~~15~~
	β Lib (HD 135742)	15 17.0 (2000.0)	-09 23	03 20	0400	00 26 W	-9 22		
	Comp.								15
	[redacted] Comp.								15
	η UMa (HD 120315)	13 47.2 (1989.1)	+49 23.4	04 10	04 20	02 15W	+49 27		
	Comp.								15
	η UMa (HD 120315)	13 47.2 (1989.1)	+49 23.4	04 25	0436		+49 22		
	comp								20
	η UMa	"	"	04 39	04 50				
	comp								20
	η UMa	"	"	0452	0508				
	comp								20
	η UMa			05 12	05 25	03 22W			
	comp								20
	4 FLATS @ 20000								
	4 FLATS @ 35000								

Spectr. Temp. ..... Dome Temp./Hum. -9c/80% Transparency Conditions ... Clear .....

Focus ..... Fans turned on again @ 03:45

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
153											3453
4948	a.k.	V= 2.50	B8V							PICKET FENCE Humidity Dome T=+10°C H=76%	1373
109											3317
127											2592
6019	o.k.	V= 1.86	B3V							Picket fence !!! Fans turned off.	1444
138											2470
6008		V= 1.86	B3V							T=+0.27 fine.	1516
360											3468
6005		1.86	B3V		Note - Not backed up because Ret.DAT						1484
388					is too Large ie 477K bytes. It is						3420
8511		"	"		Large Scratch file + tonights work.						2143
396											3493
6017		"	"								1542
409											3477
20000	≈ 3"									1426, 1425, 1420, 1420	
35000	≈ 4"									2564, 2564, 2559, 2567	

323 #1 NEW scratch file setup

wed/Thurs

Date 22/23/MAR.1989. Observers .Fld.:.To.....

Emulsion Batches:

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	1st Flat prompted one			18 49		0 0	platform		
	4 FLATS @ 24000 expnds counts			18 52	18 57	"	"		
4	FLATS @ 30 000	" "		18 58		"	~~+33~~ 4		
596C	COMP								28s
662S	EPer HD24760	3" 57.0 2000	+40. 00	19 16 10	19 35	3 22 W	+39 58		
~~728C~~ 728C	COMP								20
794C	COMP								20
860S	ϒ ORI	5 25	+6 21	19 43 24	19 48 41	0209W			
926C 992C	COMP COMP								20
1058S	EPer	03 57.0	+40 00	19 54 19	20 12 49	04 00W			20
1124C	COMP								20
1190C	COMP								20
1256S	ϒ ORI	5 25	+6 21	20 17	20 23	02 43W			
1322C	Comp								
1388C	Comp	for EPers		20 28					

Spectr. Temp. ..... Dome Temp./Hum. -4K/57% h Transparency Conditions .. Fine .....

Focus .....

Light SSE wind [Fans on & Dome opened @ 17:45]

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Mag.	Sp.	Inst. T16 T5	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
24K						H=100μ 80μ			Flats using	Bulb in front of Lens	1674
24K/30secs				X= Guide=	600/480		4480Å			1705, 1701, 1710, 1702	
30K/										2143, 2132, 2134, 2138	
232										Fans off now	2947
7027	OK	2.89	B05 II						Fds	Nice (YA HOO!)	1945
284										Top up & Dome a Few Ths	3527
270											3366
7069		1.64	B2 III						Fds	(Dewar temp -0.190 → +0.260)	2115
257										Fans on again	3607
6957		2.89	B05 V						Fds	1st Comp 3626 cnts	1729
250											3135
353											3199
7019		1.64	B2 III						Fds		1941
											3994
307											3646

325 #2

Emulsion Batches:
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Date 22/23 MAR..... Observers F/Ls..T/A.....

Plate No.	Object	R.A. ~~1900~~ 2000	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
1454S	ε Per	3 57	+40	20:30	20 48 10	04 35 W			
1520C	comp							ThA	20
1586C	comp			20 51					20
1652S	eta Aur HD32630	5 06	+41 13	20 53	21 19	0358W			
1718C	comp								20
1784C	Comp for Lust & ORi 1484			21 23					20
	ϒ ORi	05 25 0	+6 12	21 25	21 35	W			
	comp								20
	comp								20
	α Leo	10 07 ~~8~~ 41 2 02		21 42	21 48	0 36 E			
	comp								20
	comp								20
	η UMa	13 47.2	+49 23	2200	22 11	3 50 E			~~20~~
	comp								20
	comp			22 18					20

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Prism Mvg.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6007	OK	2.84	B0.5 III			400μ H=.225V 80μ W2/H=.269V			Fds	Very low in coast	1362
344											3423
345											3553
7007	OK	3.2	B3V						Fds		1678
380											3272
											3326
6987	poor	1.64	B2 III						Fds	hazy low	1543
370											3867
											3827
7580		1.3	B7V						Fds		2203
150											3086
152											4037
7004		1.8	B3V						Fds		2737
280											4500
300											4608

327 #3

Emulsion Batches: .....

Date 22/23 MAR..... Observers .....

Plate No.	Object	R.A. 1989	Declination 1989	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	α Leo	10 07 8	+12 02	22 21	22 26				
	comp								20
	comp								15
	η UMA	13 47.2	+49 23	22 38	22 48	E			
	comp								15
	comp								15
2840S	22 DRA HD 155763	17 08	+65 42	23 02	23 41	0540E	+6541		
2906C	comp								15
2972C	comp			23 51					20
	η UMA	13 47.2	+49 23	23 54	00 03	0158E	+		
	comp								15
	comp								15
	comp								15
	α Leo	10 07.8	+12 02	0017	00 23	201W			
	comp								15

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Fans still on

Exp. Mtr	Seeing	Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7000	OK	1.3	B7V B		SAME	Setup parameters for the night					1957
500											5375
300											3543
7514		1.8	B3V						Fds		2968
322											3748
393											4010
5684		3.2	B6III						Fds	α 52 → 45 set Finder Not Realized δ 53	2103
320											3796
654										Those are Reverse	5275
7513		1.8	B3V		(Finder Corrs α 4.8 δ 5.4)				Fds	New finder set δ 48 Reverse α 48 δ 54	2499
520										Look at Tau Her	3951
533											4125
452									α tell scope at 1.841 → Mike may have moved it	grating not ruled	3255
8000		1.3	B7V						Fds	Finder set α 5.1 δ 5.1	2221
1000											3355

329 #4

Emulsion Batches: .....

Date 22/23 MAR 1989 Observers .....

Plate No.	Object	R.A. ~~1900~~ 1989	Declination ~~1900~~	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Comp for			00 30		0300 E	-9 22		15
	β Libra	15 1700	-09 23	00 35	01 13	E			
	Comp								15
	Comp								15
	η UMA	13 47.2	+49 23	01 2456	01 31 23	00 30E			
	Comp								15
	Comp								15
	22 DRA HD155763	17 08	+65 42	01 51	02 24	E			
	Comp								15
	Comp								15
	Tau Her HD147394	16 19.7 2000	+46 19	02 4846	03 ~~25~~ 43	E	+46 19		
	Comp								15
	Comp								15
	β Libra	15 17	-09 23	03 38 30	0400	0030 W			
	Comp								15

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
										Normal: α 4.8 Max set δ 5.1	3759
6503	poor	2.5	B8V						Fds	very low hazy too	1821
559											4243
615											4266
7520									Fds		1883
598											4039
594										Dewar Filled @ 0133 Fans turned off @ 0145	4145
7001	Fine	3.2	B3V						Fds	Dewar T Range 0.258 → 0.308	2490
582											3994
584											4028
4439	very good	3.89	B5V	FdV image OK tonight on this star					Fds	max α 4.8 set δ 5.3	1536
621											4059
614											4118
7007	very good	2.5	B8V						Fds	offset α 4.9 δ 5.3	1944
635											3965

331 #5

Emulsion Batches: .....

Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Exp			04 04 40					15
	η UMa	13 47.2	+49 23	04 07 23	04 14 19	2 13 W			
	comp								15
	comp			04 20					15
	22 ORA	17 08.8 1989	+65 42	04 24 28	04 47 23				
	comp								15
	comp								15
	η UMA	13 47.2	+49 23	04 52 16	05 01 49				
	comp								15
	4 FLATS @ 45000								
	4 FLATS @ 41000								
	4 FLATS @ 22000								
	GLOBE STARTED after closeup & top up. Dark slide in.								

Spectr. Temp. ..... Dome Temp./Hum. ~7C/85%H Transparency Conditions .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
											4121
7496		1·8	B5V						Fds	reset Crosshairs α 5:2 δ 5:2	1750
1763											3894
760									〃		4074
7001	OK	3~~2~~	~~B5V~~	BGII					Fds	Dome Temp −0251 → +0310	1727
694											3999
690											3966
8002	good	1·8	B3V						Fds.		2163
801											3572
										2749, 2843, 2853, 2840	
										2488, 2448, 2445, 2428	
								Dome −250 +317		1212, 1260, 1320, 1322	

Ret. to DHT has 143552 bytes / no backup done

333 #1

Thurs / Fri

Date MAR 23/24/89. Observers T.T.

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
2L	1st Flat prompted.			190835			platform		45sec
68C	1st Comp	03 57.2	1989.5	1920				TH	20sec
134S	ε Per HD24760	03 57.2	+39 59	1929	19 56	03 47W	+39 59		
200C	Comp								20
266C	Comp		1989.5						20
332S	χ ORI	05 24.6	+06 20	20 00 16	20 34 24	03 00W	+6 19		
398C	Comp			20 06 16					20
464C	Comp			20 42 47					20
530S	ε PER	03 57.2	+39 59	20 42 47	21 11	05 02W	+39 59		
596C	Comp			21 12					20
662C	Comp			21 15 38					20
	χ ORI	05 24.6	+06 20.5	21 18 39	21 43	04 07W			
	Comp								20
	Comp								20
	α LEO	10 07.8	1989.5 +12 01	21 51	22 09	00 07E			
	COMP								20

Spectr. Temp. ..... Dome Temp./Hum. 0°C/11=57% Transparency Conditions .. sl. Haze - thin cloud 334

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. ..... Fans and Dome opened * Shutters 4 18:30 18:30

Top up of Power @ 1845

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				Echelle 1·841	X grating	80u	600, 4480 4480Å			Bulb in front of Lens Stellar MODE	2027
											3364
6000	* Fine	2·84V	B0·6V						Flds Pgm	sl haze/ seeing going * cloud	Fine 1757
336										T range = -0.13° to +0.22°	3305
330											3401
7200	ok	1·64 V	B7V							Fans off @ 20:20 Fine	2153
~~270~~											3673
											3654
1354	ok	2·84V	B0·5V	Note TV image		when Exposure counter stil visible through			(1 cut in 2 secs) cloud	Semi cloudy	479
426											3853
410										Thickening cloud	3766
1032	so so ~~ok~~			Image just visible (1 cut / 3 secs of Exp meter)						cloudy	293
412											3894
427											4262
7000	ok	1·3	B7V								2469
224											3513

335 #2

Date ..MAR 23/24/89 Observers ..T.n.....

Emulsion Batches:
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Plate No.	Object	R.A. 1900 / 1985	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Comp							ThA	20s
	ETA UMA	13 47.1 ~~13 47.9~~	~~+49 22~~	2226	2259	0259 E	+4921		
	Comp			2302					20
	Comp			2309					20
	α Leo	10 07.8	+12 01	2312	2329	0110 W			
	Comp								20
	4 Flats @ 35,000 to 40,000 cnts (expmeter)			2342		00	platform		
	4 Flats @ 20K cnts			2349	2355	"	"		

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... cloudy, thinky .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -2°C / 70%

Exp. Mtr.	Seeing	Log Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
62 note low count											3218
6298	soso	1.86	B3V							more cloud	2500
61											3080
54											3126
6010	soso	1.5	B7V								1949
6078											3282
							ADU → 2600, 3128, 2546, 2335				
										1524, 1575, 1779, 1676	
			Total = 253,568 bytes.				Backed up on new floppy @ MAR2389.DAT				

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Sun – Mon

Date MAR 26.1.27.1.8.9... Observers ..Tn.....

Emulsion Batches: 2.52, 0.10 — 23 hrs N₂H₂ 9 ago

Dev MAR 24 @ 68° Ilford F4 1.47 – MAR 26

Dev Mar 29/Vee IIa-e 1.18 – MAR 19 1.37, 0.15

Polaris @ 23 hrs 9° W reversed Tn

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50534	χ GEM HD 47105	06 31.9	+16 29	19 43	19 49	01 13 W	+16 26	clear FeNe	140-140
50535	HD 23862	03 43.2	+23 50	20 01	20 52	05 08 W	+24 06	"	140-140
50535T	Spot Caln for 50534–35.				15 min @	04	17 15V 3900 / 15V 4300	15V 4810	
Fm 000 166.TN	HD 82582*	09 34.3 (2000)	+46 54	21 14 23	* Header label HD 252	00 17 E	+46 56		Int x4
167.TN	"	"	"	2120		00 0	"		"
	Note. 1st 4 Frames of 167.TN are same as 4 Frames of 166.TN							Dome	T=+20°
50536	HD 87822	10 02.5	+32 06	21 45	23 38	01 30 W	+31 38	FeNe Clear	30-30
50536T	Spot Caln for 50536-39.				15 min @	15V	P4 3900 / U3 4300	D2 4810	
50537	HD 101177	11 33.5	+45 40	23 42	01 47	02 11 W	+45 09	FeNe Clear	30-30
168.TN	HD 128718	14 36.9 (2000)	+42 50	01 55		00 40 E	+42 57		
50538	HD 8890	01 22.6	+88 46	02 06	02 14	11 40 E	Reversed +89 15	FeNe Clear	80-80
50539	"	"	"	02 20	02 31	11 33 E	"	"	80-80
50539F	Focus test					0 0			8240

Spectr. Temp. ...42°F..... Dome Temp./Hum. +36°F / 76% Transparency Conditions ...Semi cloudy / Then hazy... 338

Focus ..392, 394 & 402, 393

Spectr. Temp. ...37.5°F..... Dome Temp./Hum. +32°F / 92%

Dome shutters opened and Fans on

~~6 + 8 hrs~~ EST - No @ 18:~~40~~ EST

Exp. Mtr. R filter	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
7 40000		1·9	A0 V	BC	G=5430 1200/500 8	BS	IIIa-J	1	Asm Sp HK	* Some cloud 140 secs rate = 2580 cnts	
7250	OK	5·0	B8 V pe	"	"	"	"	1	Rg pgm	Cloud again	
-							IIIa-J				
31×31	OK	6·39	A5	Box looks good	(no doubling)	150u	4 frames in "N" mode			Through thin cloud, after thick cloud	
31×31	OK	"	"	"	"	"	"	4 added to 1st 4		Now completely clear	
Light SE breeze, Dome facing WNW								Humidity = 85%		weather radio says wind E @ 15 kms/hr @ 22 hrs	
5000 4950	50:50	6·60	F5	BC	G=4236 830/402	BS	IIa-O-e	1	Wat pgm	Set 394 T=39°f	
							IIa-O-e			Fans turned off @ 22 hrs	
4000 4050	OK-Poor	6·9	G0	BC	830/402	BS	IIa-O-e	1	Wat pgm		
31×31	OK	6·7	F2	Box OK		150u	4 frames in "N" mode			Light E wind	
10,800	50:50	1·9	F8	BC	200/500	BS	IIa-O-e	1	Asm Sp HK	T=393 T=38°f	
10K	very Poor	"	"	"	"	"	"	"	"	Cloudy	
				"	"	"	IIa-J	1	Seeing good very v. bad quickly OK		
										blue end more Red catered then is Red end	

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Fri./Sat;

Echelle Letrion obs.

Emulsion Batches:

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Date 31 Mar./1 Apr. 1989. Observers Tm-Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
62	Flat - prompted Flat					0 0	platform		60~~sec~~
68C	Comp.			01 21					20
1245	α Boo (Arcturus)	14 15.2 (1989.5)	+19 14	01 23	01 36				
200C	Comp.			01 37					20
266C	Comp			02 10					
3325	ζ UMA	13 47.2 (1989.1)	+49 23	02 13	02 29	01 03W	+49 22		
348C	Comp.			02 31					
464C	Comp.			02 37					20
~~530~~	β Lib.	15 17	-09 23	02 39	02 44				
535-785	Flats x4	Bulb clamped in front of Lens.		02 51					1min

Spectr. Temp. ..... Dome Temp./Hum. 0C/90% Transparency Conditions Very hazy - cloudy

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 0C/93%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
~40K				Echelle Reticon	600, 4465	400u Long. 80u	4965Å				1861
125											2017
~8000	V. poor										784
136											2032
											1981
8000	poor	V 1.8	B3V						Fds	[redacted]	1235
											2128
217											2096
370	V.V. poor	V= 2.5	B8V						Fds	T = +0.130 Cloudy [redacted] Discard.	.

20K, 589) (~ 30 Kratz exp meter, 979) (37K, 1138) (40K, 1247)

Backed up as MAR3189.DAT

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Sept - Sun

Date Apr. 1/2/1889 Observers R.K./J.M./Yee

Emulsion Batches: .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Focus Tests	in board - outboard - Remember Brass knob clamp before adj -							
2 0	Flat, Dark after this (#68)								45
134 2	~~Comp. -54~~	~~(1889.5) 07 38.8~~	~~+05 15~~						25
200 3	α CMi A (Procyon)	(1889.5) 07 38.8	+05 15	20 23	20 36	01 13W	~~01 13W~~		
266 4	Comp. -58			20 37					25
332 5	α CMi A (Procyon)	(1889.5) 07 38.8	+05 15	20 38	20 53	01 30W	~~01 30W~~		
398 6	Comp. -30			20 54					25
464 7	Comp. .00			21 01					25
530 8	HD47105 (α Gem)	(1900.0) 06 31.9	+16 25	21 04	21 40	03 27W	~~03 27W~~		
596 9	Comp. .26			21 40					25
662	Comp. -2.07			21 46					25
728	HD124897 (α Boo)	(1889.5) 14 15.2	+19 14	21 49	22 11	03 39E	+19 14 ~~03 39E~~		
794	Comp. -0.71			22 12					25
860/926/992/1058/1124/1190	Flat #1/2/3/4/5/6								
	Comp. 0.13			23 15					25

Spectr. Temp. ..... Dome Temp./Hum. +01°C / 60% Transparency Conditions .. Hazy. - some clouds. - cloudy

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
				X-H 5224 Echelle 1750	600, 4465	100u 50u	4465/8				
40,000											1132
232										T = -0.111	1943
20,000		V= 0.38	F5 IV							T = +0.022 SC -27.87 2447618.0634	3006
230										T = +0.067	1993
20,000		V= 0.38	F5 IV							T = +0.069 -27.89 5746	2235
236										T = +0.082	2031
245										T = +0.084	1965
5457		V= 1.9	A0 III						Dome T=30F	T = +0.109 Cloud -29.81 -0.011 ≤ T ≤ +0.147 .5975	823
298										T = +0.074	1990
67											1802
6692		V= -0.04	K1.5 III							T = -0.021 Cloudy. H-clear-Label HD124742	593
65										T = -0.144	1903
20,000/100,000/30K/75K/50K/60K				ADCU = 7440/3911/1146/2913/1946/2330						T = -0.055	
63											2060

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Emulsion Batches: .....

Date ..APR.11.2./89.... Observers ..Yee/Tn..... .....

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Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	HD87901 (α Leo)	10 07.8 (1989.5)	+12 01	23 18	23 45	02 03 W			
	Comp. −0.18			23 46					25
	Comp. −0.23			23 52					25
23	HD120315 (η UMa)	13 43.6 (1900)	+49 49	00 09	01 00	00 23 E			
24	Comp. −3.15			01 01					25
	Comp. −3.54			01 06					25
	HD137909 (β CrB)	15 27.4 (1989.5)	+29 08.5	01 13	02 01	01 00 E			
	Comp. −3.01			02 02					25

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions semi-clear - cloudy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. -1°C / 80%

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
19700		V= 1.36	B7V							Comp. done before as usual	2939
120											2000
101											1891
19933		V= 1.86	B3V							α 4.8 δ 5.4	3891
86											1908
86		~~V=~~ ~~3.62~~	~~Fop~~							T=-0.080 -0.082 ≤ T ≤ +0.197	1784
2478		V= 3.68	FOp	Terminate exp. due to clouds						(α 4.8 δ 5.3 Fiducial)	585
88										shift during exposure ~ -0.6 pix	1928

Backed up on an Old Floppy "Archive" as HPA259.DAT
1st Part duplicated on this floppy

Best focus at 0.322 for 39°F

345 Tue./Wed. Echelle focus test

Emulsion Batches:

Date 4/5 Apr. 1989 Observers Tn/Tree

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Hartmann focus test #1			20 24.5	Camera focus = 0.327 Pixel shift = −0.24		T=46F		15
	Focus test #2			20 28.5	Camera focus = 0.327 Pixel shift = −0.25		T=46F		15
	Focus test #3			20 39.2	Camera focus = 0.322 Pixel shift = −0.22		T=46F		15
	Focus test #4			20 43.5	Camera focus = 0.322 Pixel shift = −0.20	(Set by approaching from <0.3)	T=46F		15
	Focus test #5			20 55.2	Camera focus = 0.302 Pixel shift = 1.54		T=46F		15
	Focus test #6			21 00.5	Camera focus = 0.322 Pixel shift = 0.01		T=46F		15
2L	Flat Field	Prompted		23 49	Bulb in front of lens			Tung	175s
	Two 1st Flats were picket fenced. 1st one saved.							Tung	
	Flat			0122				Tung	
	Flat			0126				Tung	
	Flat			0128					

Spectr. Temp. ..... Dome Temp./Hum. 18c/73% Transparency Conditions Cloudy - mostly.....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 18c

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
			Echelle grating = 1.810 X-grating = 0.4007		H=4coop (=0.225 setting)	W= 50 μ	(=0.281 setting, actual reading = 0.2797)			Portion of slit = 0.2037	
					600, 5870		5870Å			Brass knob for camera focus was loosened for the first four tests. Re-tightened before the 5th test	
Expander										Brass knob for camera focus tightened before test.	
1½=10K										Temp still going down T = -0.830 Heater On	3188
	Temp finally stabalized @ 00 30 or so.										
×30K											
15K										T = +0.053	7086
25K										Picket fence	42848
12K											5242

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Wed./Thur.

Date 5/6 Apr. 1989 Observers Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Hartmann focus test #1			21 02.3	Camera focus = 0.322 Pixel shift = -0.11		T=43F		15
	Focus test #2			21 22.0	Camera focus = 0.322 Pixel shift = 0.02		T=42F		15
Fri./Sat.									
7/8 Apr. 1989		Yee							
	Hartmann focus test			17 [redacted]33.9	Camera focus = 0.322 Pixel shift = 0.01		T=39F		15

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions ... Cloudy .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
5			Echelle grating = 1.786 X-grating = 0.4007		H = 400 μ (= 0.225)	W = 50 μ (= 0.281, actual setting = 0.2797)				[redacted] Echelle grating was not set at 1.810.	
6					600, 5870		5870 Å			Echelle grating re-set to 1.810.	
			Echelle grating = 1.810 X-grating = 0.4007		H = 400 μ (= 0.225)	W = 50 μ (= 0.281, actual setting = 0.2797)					
5					600, 5870		5870 Å				

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Emulsion Batches:
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Date 7/8 Apr. 1989 Observers KK-Yee

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	Flat #1								30
	Flat #2								10
	Flat #3								10
	Comp			20 50					30
	HD47105 (γ Pem)	06 31.9 (1900.0)	+16 29	20 53	21 20	W	+		
	Comp.			21 22					30
	HD47105	06 31.9 (1900.0)	+16 29	21 29	21 50	W	+		
	Comp.								30
	Comp.			22 03					30
	HD87901 (α Leo)	10 03.0 (1900.0)	+12 27	22 07	22 23	01 05 W	+12 00		
	Comp.			22 25					30
	HD87901 (α Leo)	10 03.0 (1900.0)	+12 27	22 29	22 45	01 27 W	+12 00		
	Comp.			22 46					30
	Comp.			22 58					30
	HD137909 (βCrB)	15 23.7 (1900.0)	+29 27	23 04	00 19.5	01 20 E	+29 07		
	Comp.								30

Spectr. Temp. ..... Dome Temp./Hum. -1C / 76% Transparency Conditions Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. .....

Shutter opened @ 18:40
Fans turned on @ 21:26

Exp. Mtr.	Seeing	Pig. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
		Echelle grating = 1.810 X-grating = 0.4007			H=400μ (=0.225)	W= 50μ	(=0.281, actual setting = 0.280)				4886
					600, 5870		5870 Å				1260
										T=+0.102	1275
										T=+0.130	2677
	(3")	V=									
10031	0.K.	1.9	A0II						Asm Sp - KK	T=+0.147	2517
533										T=+0.186	2708
5621	poor	V= 1.9	A0II						Asm Sp - KK	T=-0.055	1799
509											2568
427											2580
10157	poor	V= 1.36	B7V							T=+0.076	2761
292											2639
10095	poor	V= 1.32	B7V							T=+0.168	2667
299											2642
133											2800
2522	poor	V= 3.66	F0p						Asm Sp - KK		1432
260										T=+0.253	2594

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Date 7/8 Apr. 1989 Observers KK-Yee

Emulsion Batches:

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
	HD 137909 (βCrB)	15 33.7 (1900.0)	+29 27	00 31	01 33	01 07 E	+29 07		
	Comp.			01 41					30
	Flat #4/5/6/7			02 50			Platform	20/20	20/20
	Flat #8/9/10/11			02 57			Platform	10/10	10/10
	Hartmann focus test			03 36.8		Camera focus = 0,322 Pixel shift = −0.39	T=39F		15
	Sat./Sun. 8/9 Apr. 1989	Yee							
	Hartmann focus test #1			19 01.6		Camera focus = 0,322 Pixel shift = −0.07	T=39F		15
	Focus test #2			00 10.8		Camera focus = 0,322 Pixel shift = −0.17	T=34F		15

Spectr. Temp. ..... Dome Temp./Hum. ..... Transparency Conditions . Clear .....

Focus .....

Spectr. Temp. ..... Dome Temp./Hum. 30. F. / 90% ..

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
2520	mer	V= 3.66	F0p						Asmfp - KK	T=+0.226	1173
											2527
6916/6800/7117/7171					ADU = 2679/2707/2784/2811					The length delay was due to a mishap: the flat field lamp was not cleaned properly & stopped before starting the first flat field, the bulb was shattered & replacement and clean-up took a long time!!!	[redacted]
3569/3585/3581/3593					ADU = 1404/1414/1412/1419						
										−0.232 ≤ T ≤ +0.276	

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Mon./Tues.

Date 10/11 Apr. 1989 Observers Yee

Emulsion Batches: IIaO-e 178 Mar.19 1.65, c.24

Plate No.	Object	R.A. 1900 (1900.0)	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Comparison Exp.
50540	HD 103095	11 47.2	+38 26	23 29	01 10	02 20 W	+37 51	FeNe Clear	Diff. OUT 60-60
50540T	Spot calibration for 50540		+44,45+47,48 See next logbook.		15 min @ 15V	D4 3900 D3 4300	D2 4810		

Spectr. Temp. 34F Dome Temp./Hum. -3C / 92% Transparency Conditions A few clouds – cloudy 354

Focus 394 Shutter opened @ 22:37

Spectr. Temp. 32F Dome Temp./Hum. -4C / 95% Fans turned on @ 23:37

Exp. Mtr.	Seeing	Ptg. Mag.	Sp.	Inst.	Grating/ Tilt	Slit	Emulsion	P.H.	Program	Remarks	Quality
6009	V. poor	V= 6.45	GBIIp	BC	B=5430 1200/50.8	BS	IIaO-e	1	KK Std. rel ?	60-s comp. = 1489	comp. s/cut s/cut
		B= 7.20					IIaO-e				focus cut ?

Emulsion Batches:
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Date ..... Observers .....

Plate No.	Object	R.A. 1900	Declination 1900	Starting Time E.S.T.	Ending Time E.S.T.	Hour Angle End	Declination	Comparison Type/Filter	Exp

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